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MINERAL INDUSTRY SURVEYS

U. S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES



Rogers C. B. Morton, Secretary

Elburt F. Osborn, Director

JANUARY 1972

PETROLEUM PRODUCTS SURVEY NO. 73

MOTOR GASOLINES, SUMMER 1971

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MOTOR GASOLINES, SUMMER 1971

by

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Bartlesville Energy Research Center, Bureau of Mines U.S. Department of the Interior, Bartlesville, Okla.

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INTRODUCTION

The properties of motor fuels sold through service stations in the United States are reported in accordance with a cooperative agreement between the American Petro-leum Institute and the Bureau of Mines of the United States Department of the Interior. By agreement with the American Petroleum Institute, identification of the data by item number is confidential.

Analytical data for 4,602 samples that represent the products of 57 companies are included. Company representatives collected the samples during June, July, and August 1971. As in previous surveys, the gasolines covered by this survey include those from both large and small suppliers. Laboratories of various refiners, motor manufacturers, and chemical companies obtained and submitted the data to the Bureau of Mines for compilation. Motor-gasoline survey reports published during the past 10 years are listed on page 5.

Gravity and octane numbers were reported for all samples (4,602) used to prepare this report. However, other analytical tests required for a complete gasoline analysis were not available for many of the samples. Tests in this category, the number of test results available and used in this report, and the percent of the total samples represented for that test include the following:

	Number of	Percent of
Test	samples used	total samples
Sulfur content	914	20
Lead content	3,562	77
Distillation	2,648	58
Vapor pressure	2,585	56

SUMMARY

The characteristics of motor gasolines for summer 1971 are summarized in table 1, and for comparison, those for summer 1970 are shown in table 2. Trends of some of the more important characteristics for several years are shown in figures 1 and 2. The following data show trends of national average octane numbers during recent years:

	Regular- Octane r		Premium- Octane r	Contract to the contract to th
	Research	Motor	Research	Motor
Winter 1969-70	93.8	86.3	99.8	92.2
Summer 1970	93.8	86.3	99.8	92.2
Winter 1970-71	93.9	86.4	99.8	92.2
Summer 1971	94.0	86.3	99.8	92.3

Tables 3 and 4 show regional average octane numbers of regular- and premium-price fuels.

Data for third grade, intermediate grade, and super-premium gasolines are included in table 5.

Data for gasolines that contained 0.75 g Pb/gal. or less are included in table 6. Data for each of the 218 items in the table are averages for the 573 samples represented.

DISCUSSION OF DATA

Terms used in the surveys have the following meanings:

District: The designation of a marketing area for collecting samples and data. The present arrangement of 17 districts, developed by the CFR Committee, 1/ was selected with reference to the specifications on motor gasolines, refinery locations, population centers, and arteries of commerce such as navigable rivers. The States or parts of States in each district are indicated in the headings of table 3 and are shown in figure 5.

Brand: The gasoline sold within a given price group and by a given trade name.

Item: The index number assigned to a given brand in a given district. The data for each item represent the average of those submitted for that brand in that district. The number of samples represented follows the item number.

Coordinating Fuel and Equipment Research Committee (formerly the Coordinating Fuel Research Committee) of the Coordinating Research Council, Inc. From 1935 to 1948 the motor-gasoline surveys were conducted under a cooperative agreement between the Coordinating Research Council and the Bureau of Mines.

Sample: The supply of gasoline obtained at the service station and analyzed in the laboratory.

Table 3 presents by districts data for gravity in degrees API, sulfur, gum, lead, research— and motor-method octane numbers, Reid vapor pressure, and distillation characteristics of the motor fuels collected. The tests were made according to American Society for Testing and Materials standards. 2/

Corrosion test results are not included in the district tables as all the reported numbers are "1," according to the corrosion scale given in table 1 of ASTM D130. 2/

Gum test data are reported to the nearest whole number. The distillation temperatures, corrected to barometric pressure at 760 mm Hg, are those for percent evaporated.

Average values follow the tabulated data in table 3 for the respective grades of fuel shown in each district. The averages of the various properties were computed without reference to the total number of samples represented by each item.

The district averages from table 3 are shown in table 4 with the number of brands and number of samples for regular- and premium-price gasoline in each district. The national averages for each of the properties of fuels sold in each of the 17 districts are given at the end of the table.

Table 5 shows data for third grade, intermediate grade, and super-premium motor gasolines.

Figures 1 and 2 illustrate trends in the national averages of certain properties of regular- and premium-price gasolines, respectively, since the summer of 1946. Averages for the winter surveys are plotted on the lines that represent the years and for the summer surveys between the lines. Octane-number points are connected for successive surveys, but those for Reid vapor pressure and distillation temperatures are plotted separately for summer and winter surveys. Charts that show plots of these properties from 1935 (except winter 1941-42 and summer 1942) are presented in the survey report on motor gasolines for winter 1964-65 and preceding reports. 3/

^{2/} American Society for Testing and Materials, 1970 Annual Book of ASTM Standards, Part 17, Petroleum Products -- Fuels; Solvents; Burner Fuel Oils; Lubricating Oils, Cutting Oils; Lubricating Greases; Hydraulic Fluids, Philadelphia, Pa., 1,294 pp.

^{3/} Blade, O.C., Motor Gasolines, Winter 1964-65. Bureau of Mines Petroleum Products Survey No. 40, 38 pp. (in cooperation with the American Petroleum Institute).

Figures 3 and 4 illustrate distribution (frequency) of octane values by numbers of samples for all grades of fuel represented. Each bar represents one-half octane number.

Data for gasolines that contained 0.75 g Pb/gal. or less are included in table 6. The analyses represented by the data in table 6 also are included in the items in tables 3 and 5 with their respective grades. However, the data in table 6 do not correspond to item numbers in the other tables because data in table 6 were collated for each brand marketed in each city, rather than for each brand marketed in an entire district.

Tables 7 and 8 show the percentages of all samples for each district at each whole octane number level, cumulated according to increasing octane number.

The districts, locations, and number of samples of gasoline represented are listed in table 9 and shown on the map in figure 5. The locations are named for the principal cities in the respective vicinities, and include suburbs and adjacent communities. The area of the circle at each location is proportional to the number of samples obtained. The summary at the end of table 9 lists by district, the number of locations, samples, and the percentages of the latter based on the total reported.

This report does not discuss the significance of the data presented. Reference may be made to the ASTM specification 4/ for motor gasoline and its appendix, "Significance of ASTM Specifications for Motor Gasoline," at a technical library.

^{4/} American Society for Testing and Materials, Standard Specifications for Gasoline (D439): 1970 Annual Book of ASTM Standards, Part 17 (see footnote 2), pp. 173-183.

LIST OF MOTOR-GASOLINE SURVEY REPORTS, 1962-71

			PPS			No. of
Author	Season	and Year	Report No.	Publ	ished	Pages
		D I				
In cooperation with the	American	Petroleum	Institute			
Blade, O. C.	Summer	1962	27	Jan.	1963	32
Do.	Winter	1962-63	30	June	1963	32
Do.	Summer	1963	33	Jan.	1964	35
Do.	Winter	1963-64	35	June	1964	40
Do.	Summer	1964	37	Dec.	1964	40
Do.	Winter	1964-65	40	July	1965	38
Do.	Summer	1965	43	Jan.	1966	39
Do.	Winter	1965-66	45	June	1966	38
Do.	Summer	1966	48	Dec.	1966	38
Do.	Winter	1966-67	50	June	1967	38
Do.	Summer	1967	53	Dec.	1967	38
Do.	Winter	1967-68	55	June	1968	39
Do.	Summer	1968	58	Jan.	1969	38
Do.	Winter	1968-69	60	July	1969	38
Blade, O.C. and				•		
Ella Mae Shelton	Summer	1969	63	Jan.	1970	38
Shelton, Ella Mae						
and C. M. McKinney	Winter	1969-70	66	Aug.	1970	47
Do.	Summer	1970	68	Jan.	1971	49
Do.	Winter	1970-71	70	June	1971	54
Shelton, Ella Mae	Summer	1971	This report			

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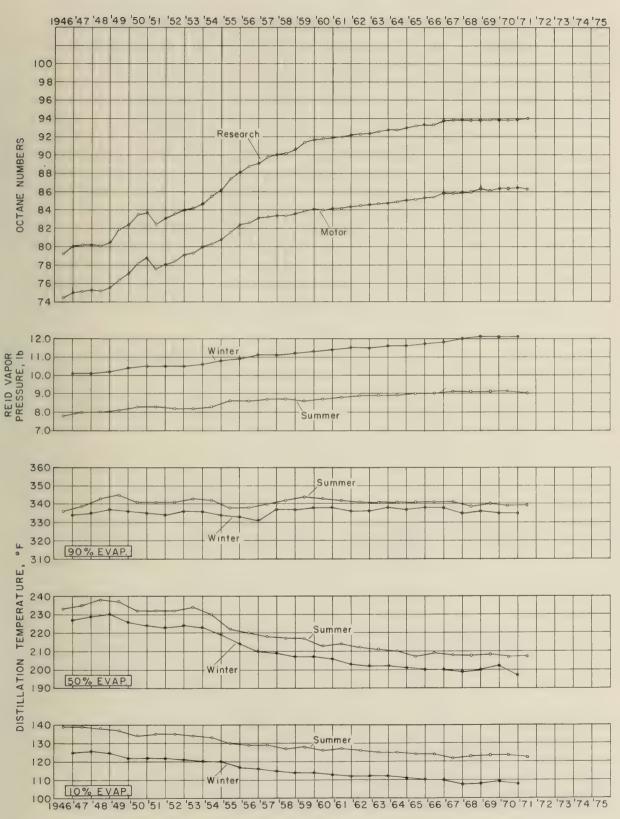
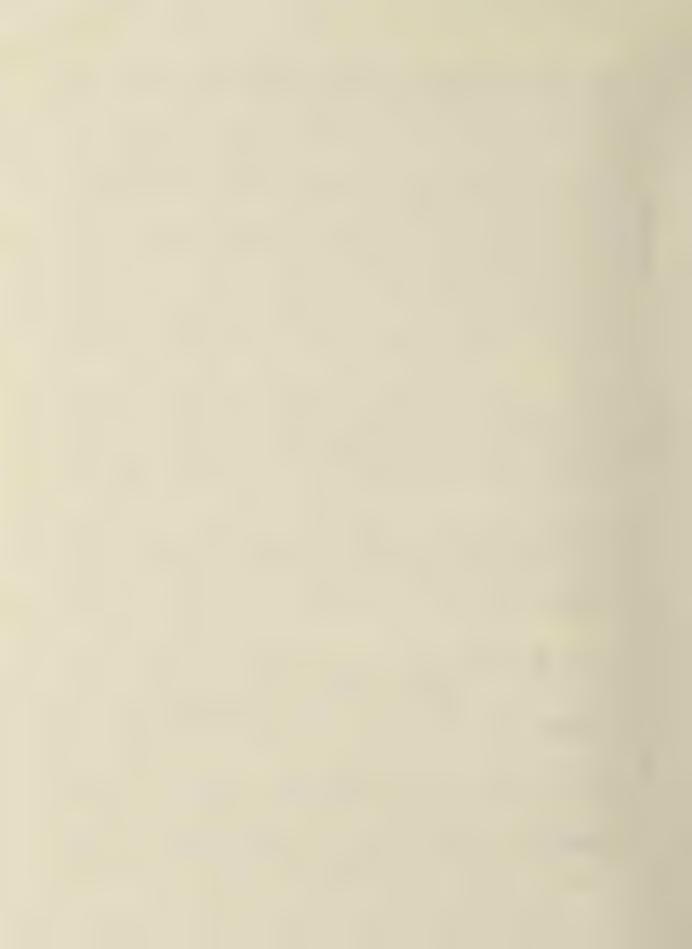


FIGURE 1.—Trends of Certain Characteristics of Regular-Price Gasolines.



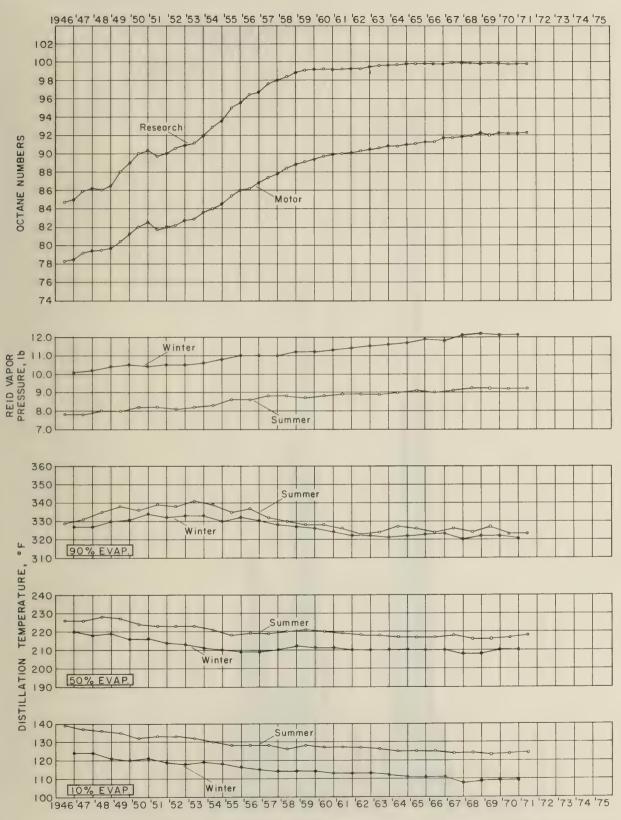
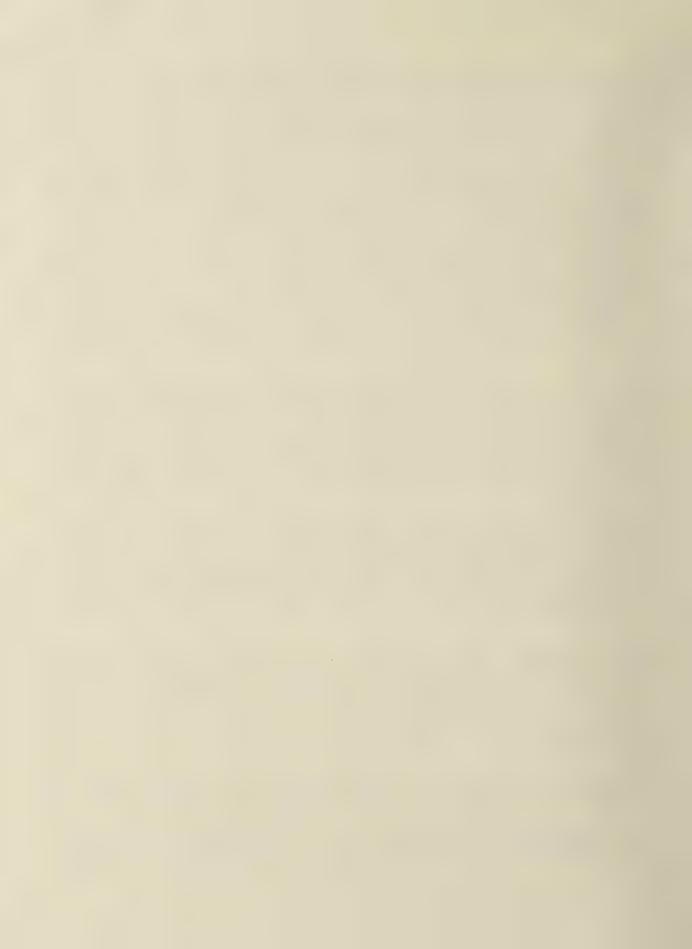


FIGURE 2.-Trends of Certain Characteristics of Premium-Price Gasolines.



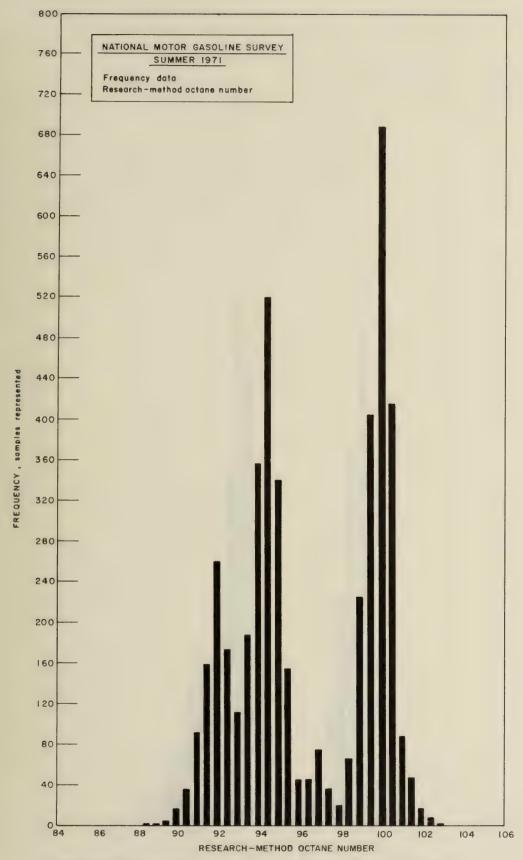


FIGURE 3.- Distribution of Research — Method Octane Numbers.



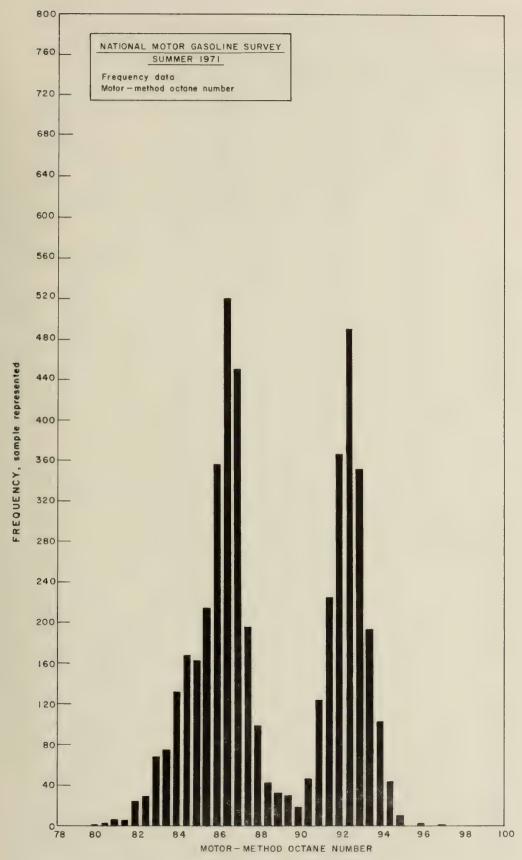


FIGURE 4.—Distribution of Motor—Method Octane Numbers.



TABLE 1. - Summary of values, motor gasoline survey, summer 1971

Test	AST M method	Regular-price gasoline Average	Premium-price gasoline Average
Gravity, °API	D287	60.9	60.7
Corrosion, No.	D130	1	1
Sulfur content, wt %	D1266	0.043	0.022
Gum, mg/100 ml	D381	1	1
Lead, g/gal.	D526	2.22	2.67
Octane number, Research	D2699	94.0	99.8
Octane number, Motor	D2700	86.3	92.3
Reid vapor pressure, lb	D323	9.0	9.2
Distillation	D86		
Temp, °F			
IBP		92	91
5% evaporated		109	108
10% Do.		122	124
20% Do.		142	148
30% Do.		162	172
50% Do.		206	218
70% Do.		260	257
90% Do.		339	323
95% Do.		372	354
End point		410	397
Residue, vol %		1.0	0.9
Loss, vol %		1.3	1.5

TABLE 2. - Summary of values, motor gasoline survey, summer 1970

	ASTM	Regular-price gasoline	Premium-price gasoline
Test	method	Average	Average
Gravity, °API	D287	61.1	60.8
Corrosion, No.	D130	1	1
Sulfur content, wt %	D1266	0.042	0.021
Gum, mg/100 ml	D381	1	1
Lead, g/gal.	D526	2.43	2.81
Octane number, Research	D2699	93.8	99.8
Octane number, Motor	D2700	86.3	92.2
Reid vapor pressure, lb	D323	9.1	9.2
Distillation	D86		
Temp, °F			
IBP		93	92
5% evaporated		110	109
10% Do.		123	124
20% Do.		143	148
30% Do.		163	172
50% Do.		207	217
70% Do.		260	257
90% Do.		339	323
95% Do.		372	355
End point		410	399
Residue, vol %		0.9	0.9
Loss, vol %		1.5	1.6

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS

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MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

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TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 1 NORTHEAST -- CONTINUED
MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

PREMIUM-PRICE GASOLINE

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17	5 60.0	0 .025	-		100.4	6	7.96	10.0	87	-	2 131	152	207	257	329	55	994	.82	S
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TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

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REGULAR-PRICE GASOLINE

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SAMPLES	233																				

TABLE 3. - MOTOR GASOLINE SURVEY. SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

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26			00		8	0	2	. 9		0	05 1	7 13	16	228	11	32 3	56 3	1 .	0 1.	9
57	21	8	01	-	10	66	2	. 9		0	07 1	0 14	16	214	63	21 3	49 3	5	1.	•
56			0	~	2	00	2	. 9		9	101	3 14	17	223	20	27 3	52 3		-	
29		8	01		5	00	-	5		0	05 1	14	16	221	65	35 3	99	60	9 1.	0
9	23	0	.010	-	9	0	O	96.3		90 1	06 1		~	217	52	0.8 3	37 3	9	0 1.	~
61		7	03		4.	00	-	9		0	04 1	8 14	17	224	78	34 3	52 3		7 1.	O -
62		6				00	2	. 9		9	01 1	6 13	15	204	47	02 3	32 3	0	8 1.	~
6.3	**	2	.010		0.	01.	3	-		m	07 1	4 15	18	235	72	26 3	49 3	_	9 1.	_
6.4	6	0		•	. 7	000	3	. 9		6	02 1	9 14	16	218	09	36 3	70 3	90	7 1.	6
65	0	6	•		-	00	2	. 9		6	04 1	9 14	17	219	99	26 3	52 3	4	9 1.	4
99	10	80	.011			00	-	S		N)	02 1	7 14	17	221	64	23 3	52 3	2	0	9
AVERAGE		58,9	.013	1	9 0	10004	92.4	96.4	9.5	89 1	05 11	0 14	2 168	220	264	324 3	52 3	91	0	2
190	243																			

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FUR DIFFERENT BRANDS -- CONTINUED

REGULAR-PRICE GASOLINE

	NN TENN.
	AND EASTERN
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	FLA
	GASS
EAST	Soco
SOUTHEAS	N.C.
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DIST.	

		000	J L	3	EA		E NUM	œ	V P			O	S	LATI	NO	ASTM	D86			
L	SAM	ASTM	ASTM	ASTM	ASTA	RESA	MOT	Σ	ASTM	TEMP	ERATU	-	1 1	Or I	TED	0 7		HE	1	
ITEM	L	28	12	38	52	ST	ST		32			PER	CENT	EVA	PORA	TED		_	RES	LOSS
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67	19	e	3	-	4.	7	9	0		0,	20	60	4 1	0 1	9 2	32	35	3.0	-	
68	4	6.09	040	N	2.80	2.46	87.0	6.06	4.6	88	104 1	19 14	0 16	1 20	5 25	4 333	3 364	4 411		1.2
69	2	***			4	4	2	0				•		•			•	•	1	
20	~	1.	.030	u-l	.2	7	•	0	9.5	91		3 1	3 1	3 2	8 26	e	36	4		1.5
7.1		0			9.	5	9	0		0	05	8 1	7 1	9	3 26	3	36	39		1.2
72	23	1.	.020	-	0	4	9	0		-		6	6	0	8 26	m	37	4	-	
73	4-1	0	3		9	7	5	0		9	-	5 1	-	7 2	4 26	6	35	സ	+-1	3.0
74	12	8	.008		. 4	7	-	-		m	20	9 1	6 1	5 1	9 26	3	35	സ	-	1.9
75		0	080°		4.	4	96.6		9,2	91	108 1	22 14	E.	4 20	7 26	0 346	5 377	409	-	1.6
92	S				.3	4	-	0		-	0.8	1	1 1	0	0 24	3	36	42	-	0.
77	17	+	-		4.	4	7	0		C.	08	-	9 1	7 2	0 25	76	37	4	-	
7.8	m	6	.025	~	.2	9	-	2		0	02	8 1	0	3 2	5 27	36	38	41	-	2.0
62	58	+	2		6.3	4	9	0		0	20	2 1	4 1	7 2	3 26	3	36	39		
90	60	2	2		.2	4	. 9	0		0	11	3	9 1	6 1	7 25	3	36	0 4		1.2
81		6	3		. 1	4	. 9	0		9	9 8	4 1	9 1	5	6 25	m	37	41	1	
82	٣	0	•		.7	5	. 9	0	•	-	-	4	1	9	5 26	9	35	m		4.
83	m	8		•	.3	4		•		2	0	3 1	3 1	2 2	2 25	9	37	41		•
84	m	8	•		• 6	4	-	0			15	5 1	2 1	8	7 25	9	36	39	-	'n
85	2	-	.043		8	4 .	•	0		9	11	2	0	8	5 24	3	S	40	-	2.3
VERA		61.1	.028	-	.3	9.46	86.9	8.06	9.2	91	108 1	21 14	10	0 20	3 25	7 33	5 366	3 405	1.1	1 . 4
SAMPLES	178																			

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 3 SOUTHEAST -- CONTINUED N.C., S.C., GA., FLA., ALA., AND EASTERN TENN.

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7 61.2 .020 1 2.53 100.2 92.6 96.4 9.7 92 105 122 146 171 219 258 332 362 411 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	V18484444444444444444444444444444444444	00	e 1 e e	50.0	00	8	,		5 1	1 11	14	0 2	24 2	33	36	41		
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3 57.4 .004 0 2.78 100.2 92.7 96.4 9.1 92 107 121 145 171 227 272 330 356 400 1.1 1 5 60.6	20 00 00 00 00 00 00 00 00 00 00 00 00 0	02		4.	00	8	. 9		6	5 11	13	61	202	8 31	3 34	38		
5 60.6 — 2.80 100.0 92.7 96.4 9.1 92 107 120 142 164 209 248 316 346 393 1.1 7 58.6 .008 1 2.77 100.3 92.1 96.0 90 106 122 142 160 207 259 336 361 404 1.1 1.1 </td <td>WW 60</td> <td>00</td> <td>0</td> <td>1</td> <td>00</td> <td>2</td> <td>9</td> <td></td> <td>0 1</td> <td>7 12</td> <td>14</td> <td>7.1</td> <td>27 2</td> <td>2 33</td> <td>0 35</td> <td>40</td> <td></td> <td></td>	WW 60	00	0	1	00	2	9		0 1	7 12	14	7.1	27 2	2 33	0 35	40		
7 56.6 .006 1 2.77 100.3 92.1 96.2 9.0 90 106 122 142 160 207 259 336 361 404 1.1 1.0 2.9 6 100.3 91.6 96.0 9.4 83 97 115 139 163 219 265 334 370 412 1.0 2.9 6 1.0 8.0 10 0 2.85 99.6 92.2 96.0 9.1 90 108 125 180 175 220 257 311 337 379 1.1 1.0 2.0 6 1.1 1.0 34 2.2 25.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	300			00	00	2	. 9		2	7 12	14	99	09 2	8 31	6 34	39		-
3 59.4 .016 2 2.96 100.3 91.6 96.0 9.4 83 97 115 139 163 219 265 334 370 412 1.0 2.96 61.8 .010 0 2.85 99.6 92.2 96.0 9.1 90 108 125 180 175 220 257 311 337 379 1.1 1.2 8 61.1 .034 2 2.81 100.2 92.7 96.0 9.1 90 108 125 180 175 220 257 311 337 379 1.1 1.2 2.81 100.2 92.7 96.0 9.0 90 104 124 184 167 215 256 321 350 399 1.1 2.3 53.0	3 59	00	-	-	000	2	9		0 1	6 12	14	09	07 2	9 33	6 36	40		
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6 61.1 .034 2 2.61 100.2 92.7 96.5 9.0 89 105 120 144 167 215 256 321 350 399 1.1 2.2 1 56.7 .015 1 3.19 100.0 92.0 96.0 90 104 124 184 176 222 256 316 350 384 1.0 2.0 3 53.0 - - 2.17 101.8 92.5 97.2 9.9 84 97 124 170 206 243 270 318 341 391 1.5 3.0 3 60.8 - - 2.64 99.8 96.8 96.8 96 112 126 148 168 211 248 313 345 390 .8 1.0 5 3 61.1 - 2.61 100.3 92.4 96.4 9.6 92 112 123 144 170 218 260 333 362 405 1.0 0 2 61.6 .013 0 3.00 100.0 92.4 96.2 10.1 89 106 116 137 160 216 260 321 347 386 1.0 3 59.9 .015 1 2.59 100.0 92.4 96.8 90.105 120 145 169 219 259 319 348 392 1.0 1.0 10	9 61.	0	0		99	2	. 9		0 1	8 12	13	75	20 2	7 31	1 33	37		
56.7 .015 1 3.19 100.0 92.0 96.0 9.0 90 104 124 194 176 222 256 316 350 384 1.0 2.553.0	8 61.	03	2	8	00	2			9	5 12	14	67	15 2	6 32	1 35	30		
53.0 - 2.17 101.8 92.5 97.2 9.9 84 97 124 170 206 243 270 318 341 391 1.5 3. 60.8 - 2.64 99.8 92.8 96.3 8.8 98 112 126 148 168 211 248 313 345 390 .8 1.61.1 - 2.61 100.3 92.4 96.4 9.6 92 112 123 144 170 218 260 333 362 405 1.0 .61.6 .013 0 3.00 100.0 92.4 96.2 10.1 89 106 116 137 160 216 260 321 347 386 1.0 3. 59.9 .015 1 2.59 100.3 92.3 92.3 96.3 9.4 89 105 120 145 169 219 259 319 348 392 1.0 1.0	58.	01		-	00	2	•		0 1	4 12	1.9	92	22 2	6 31	6 35	30		
60.6 - 2.64 99.8 92.8 96.3 8.8 98 112 126 148 168 211 248 313 345 390 .8 1:61.1 - 2.61 100.3 92.4 96.4 9.6 92 112 123 144 170 218 260 333 362 405 1.0 .61.6 .013 0 3.00 100.0 92.4 96.2 10.1 89 106 116 137 160 216 260 321 347 386 1.0 3.59.9 .015 1 2.59 100.3 92.3 92.3 96.3 9.4 89 105 120 145 169 219 259 319 348 392 1.0 1.0	53.		•	-	01.	8			4	7 12	17	90	43 2	0 31	8 34	9		
61.1 - 2.61 100.3 92.4 96.4 9.6 92 112 123 144 170 218 260 333 362 405 1.0 0 61.6 0 013 0 3.00 100.0 92.4 96.2 10.1 89 106 116 137 160 216 260 321 347 386 1.0 3 59.9 015 1 2.59 100.3 92.3 96.3 9.4 89 105 120 145 169 219 259 319 348 392 1.0 1.0	60.	•		9	66	5	9		8	2 12	4	68	11 2	8 31	3 34	30		
61.6 .013 0 3.00 100.0 92.4 96.2 10.1 89 106 116 137 160 216 260 321 347 386 1.0 3. 59.9 .015 1 2 2.59 100.3 92.3 96.3 9.4 89 105 120 145 169 219 259 319 348 392 1.0 1.	61.			9	00	2	9		2 1	2 12	14	10	18 2	0 33	3 36	0 4		
9.9 015 1 2.59 100.3 92.3 96.3 9.4 89 105 120 145 169 219 259 319 348 392 1.0 1.	61.	0.1	0	0.	00	2	9	0	9	5 1	13	09	16 2	0 32	1 34	38		•
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La IV	
AVEDAGE DATA FIDE CARREDONAL DONAL STATES	APPALACHIAN OHIO, W. MA., WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.
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	DIST. 4 APPALACHIAN OHIO, W. WA
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	SAM	ASTM	ASTM	ASTM		FS	! →	X+X	Σ	TEMP	ERATL		La.	CORRE	ECTED	101	760 M	N IC	_		
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	•	0_	× – ×	Œ	G/GAL	02699	N	2	LB	IBP	5	10 2	0 3	0 5	0 7	6 0	0 95	EP	96	70	
0		0	4	8	4	4	7	0		6	02	14	32	49 1	88	9	(4)	et et	9 1 .	0 2 0	0
90	7	61.4		-1	3,31	94.5	87.9	91.2	9.7	60	108 1	119 1	40 1	60 2	08 2	67 35	55 39	1 42	_		0
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RAGE	-	80.09	.034		~	4 0	87.0	0	1.6	6	9	119 1	39	59 2	05 2	2 3	42 37	'n	5	-	

TABLE 3. - MOTOR GASOLINE SURVEY. SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

4 APPALACHIAN--CONTINUED OF WESTERN PA.» EASTERN KY., AND PART OF MD.

DIST.

PREMIUM-PRICE GASOLINE

PLES D28TM		N T W W W W W W W W W W W W W W W W W W	ALSA	ES	C	4	è	2			4							
LES 0287 8 54.1 7 60.3 14 61.1	0000	ω Σ ~ Ω			2	E + 'L	0	LEMIC	HATO	REP	S	ORREC	TED	7	E 09	HE?	_	
8 5 5 4 4 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2000	2 - N	25	SI	ASTR		0323			PE	RCENT	FVA	PORA	TED	I		RES	LOSS
4 60 3 4 6 6 1 . 1 6 6 1 .	0000	- 2	G/GAL	05698	02700	2	LB	186	5	0 2	0 3	0 50	10	06	9.5	EP	96	54
7 60.3	0.00	2	000	•	•	9		98		14 1	~	2	4 2	31	9 34	37	0	3.4
4 61.	010		7	00	N	9	6	91 1		C	45 1	7 2	2	32	7 35	4	•	
42	5	~	2.68	1001	93.4	96.8	10.4	85 1	01 1	15 1	38 1	63 21	2	59 31	6 34	2 389	0.	2.2
* u >	•		.7	00	3.	9	0	84 1		en	2 1	2 2	0	32	6 35	39		
1 62.	00		0	00	3,	9	6.	87 1		19 1	0 1	4 2	N	31	8 35	0	1.0	1.5
9	-	0	. 8	100.2	93,3	,		88 1		-	44 1	7 2	CV	31	8 34	m	•	
63.	-		0	000	3	2		89		~	40 1	4	N	31	1 33	38	. 7	2 .8
64.				000	2	. 9		90		14 1	35 1	8	N	31	2 34	9		
4 58	-		S	00	3	9		87 1		N	47 1	1 2	N	32	8 36	40		
60.	.012			000	3	,		88		~	41 1	8	2	31	9 35	39		1.9
3 60.			6.	00	6	9	•	90 1		20 1	7 1	6	N	32	2 35	39		
3 59	0		0	. 66	3	. 9		88		00	3	8	C.	32	78 6	38		3.0
58.	600°		2.27	00	92.4	9		89 1	06 1	20 1	44 1	68 21	N	31	9 34	9 394		4.9
0 60.	-			100.4	2	. 9		86 1	0	~	0 1	6 2	N	31	4 34	39		1.8
61.	5			000	2	9			0	19 1	6 1	4 2	N	33	2 36	41		
62.	3			100.3	2	. 9		88 1		16 1	6 1	4 1	N	32	2 36	4 408		1.8
8.09	.017			100.3	92.9	96.6	9.8	88	04 1	18 1	-	67 21	2	6	1 35	2 395	0.0	2.2

					TABL	LE 3	TOR	S.	INE	URVE	S	UMME	R 19	+4					
٥	DIST.	5 MICH	HIGAN				AVER	AGE DA	ATA FO	10		F-	Z Z	80	ပ	ONTINUE	۵		
							OZ	EGULAR	R-PRIC	E GA	SOLI	M							
		œ	7	3	EA	OCTAI	NE NUM	BER	A P				DIST	ILLA	NOIL	P AS	O H	96	
	SAM	ASTM	ASTM	ASTM	ASTM	ES	10	R+X	ASTM	TEMP	ERAT	URES	<u>L</u>		ECTE	T O	760	X	HG
ITEM	Ш	28	12	38	52	ASTM	ASTM	:	32			d.	RCE	H	VAPO	RATE	0		
		٥	-	S E	5/	26	27	23	9	1 B b	S	10	20	30	20	02	06	9.5	e L
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4	21	<u>.</u>	3	-	-	5	9	0		0	0	20	39	29	0.5	9	5	8	N
4	5	6	(6)	2	2.24	5	9	0	0	~	0	15	39	64	21	8	S	0	CL
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4	2	80	2	~	4.	5	9	1.		0	0	19	41	65	15	_	4	~	-4
4		0	-		9.	4		0		8	0	18	39	61	11	-	S	8	***
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TABLE 3. - MOTOR GASOLINE SURVEY. SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

PREMIUM-PRICE GASOLINE

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	TEM		186	69	87	87	87			88		6			88		91	40	87	85	88	
	ASTM	32	-B	10.2			•	9.5				9.8	0	•	•		9.3		9.2		2.6	
ER	X+X	:	2	95.8	•	0.96	5	96.5	•	9	9	96,3	'n	9	9	S	S.	96.2		95.7	96.1	
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TABLE 3. - MOTOR GASOLINE SURVEY. SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 6 NORTH ILLINDIS NORTHERN IND., NORTHERN ILL., EASTERN IOWA, AND WIS.

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172	7		890°		2.95	S	•			85		19	38	61		63	47	4 0	9		
173	4	0	9	C4	•	4	9	0		76	0	14	34	99	đ	56	32	2 4	7	0	
174	N	80			. 48		9	0	80	86	0	23	6 7	25	aC)	89	46	8 4	80	_	
175	m	0	.080			S	9	-		92	0	16	39	29	60	09	44	4	80	~	- 0
176	e	0	.052			. 9	7.	•		76	•	25	77	99	0	63	38	5	0	_	80
177	m	60,5	640	8	2.56	95.5	87.1	91,3	9.1	98	108	121	142	162 2	208 2	260 3	54	388 4	20	90	2
178	7	8	.041			5	. 9	-1		95	0	21	4 1	63	ac.	99	40	4	9	0.0	
179	4 0	6	.065	•		5	9	-		93	0	20	39	58	7	68	46	4 0	9	0	
180	0	8	.015			6		0		91	0	18	36	54	90	8 7	18	6 3	(4)	0	
181	40		.030			5	9	0		93	0	19	38	59	0 0	8 9	38	4	9	wel	
182	3	0	060.			5	9	-		92	0	19	0	09	ØC.	09	20	4 9	40	0.	9.
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TABLE 3. - MOTOR GASOLINE SURVEY. SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED 6 NORTH ILLINDIS--CONTINUED NORTHERN IND., NORTHERN ILL., EASTERN IOWA, AND WIS.

DIST.

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DISTILLATION, A	50 70	9 140 162 208 2	0 147 174 220 26	8 139 161 207 2	154 180 22	0 160 188 223 26	4 152 177 230 25	1 146 175 217 26	4 166 2	4 154 183 227 26	8 146 175 217 25	3 146 169 205 23	3 149 177 223 25	3 148 174 218 25	
RVP, ASTM TEMPERATU	LB IBP 5 1	9.5 91 105 1	9.9 90 104 1	10.0 88 104 1	11 1	8,8 90 111 1	9,9 92 106 1	9.5 88 105 1	8,9 93 109 1	1 9.7 92 106 1	1 10,3 89 100 1	0 9.3 93 107 1	9.6 90 107 1	.5 91 106 1	
ES. MOT. R+	99 D2700	9.6 92.3 96.	9.2 92.3 95.	9.9 93.1 96.	.5 91.8 95.	9.8 92.2 96.	9,9 91,9 95,	9.7 93.1 96.	9.6 92.2 95.	9,9 92,3 96.	9.0 93.1 96.	9.2 92.7 96.	9.8 91.4 95.	9,6 92.4 96.	
GUM, LEAD,	MG G/	. 2		1 2.	2.83	- 2	- 2	8	8	8	8	- 2	- 2	1 2.	
STM ASTM	LES DZB/ D	60.8 0.	61.8	63.3	3 57.5 .017	61.8	62.0	6.09	62.2	57.2	62,3	60.0	62.2	1,01	
L.	ITEM	183	184	185	186	187	188	189	190	191	192	193	194	AVERAGE	

- MOTOR GASOLINE SURVEY, SUMMER 1971 AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED TABLE 3.

7 CENTRAL MISSISSIPPI WESTERN KY., SOUTHERN IND., SOUTHERN ILL., AND EASTERN MO. DIST.

ITEM

			LOSS		-			1.4								1.5	1.2		-2	٠,			1.3	-
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	N. A	T O	AT	20	4	~	9	in	5	9	9	9	S	9	9	S	9	9	9	'n	5	~	268	0
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	1	COR	_	30	159	166	160	163	164	9	9	S	~	9	9	9	9	5	9	5	9	167	9	9
	DIS	la.	RC	20	140	147	140	141	141	143	4	3	5	4	ന	4	4	3	4	m	3	4	141	4
OLINE		TURE		10		C	120	121	118	\sim	121	α	N	S	-	122	2	3	\rightarrow	S	S	2	118	121
ASOL		PERA		S	2	11	10	109	10	10	10	10	10	10	10	11	10	10	10	11	10	10	10	-
CF		FE		I BP	80	93	86	06	89	6	89	93	98	80	06	06	85	6	80	96	80	80	88	06
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EGULAR	BER	¥ + &	8 8	CI.	0	0	-	0	0	0	o	0	0	-	•	•	•	0	0	0	0	0	91.2	0
œ	N S C	*LOX	SIE	27	7.	9	7	87.2	•	9	•	9	• 9	7	9	•	9	9	7.	7	9	. 9	87.2	86.8
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	3	ASTM	38	₩ S	a																			•
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	œ	ASTR	28	0_		***	1.	62,3	0	6	+	-	0	6	°	-	0	•		2	•	6	0	60.09
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TABLE 3. - MOTOR GASOLINE SURVEY. SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 7 CENTRAL MISSISSIPPI--CONTINUED
WESTERN KY., SOUTHERN IND., SOUTHERN ILL., AND EASTERN MD.

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216		0	-		6.	000	3	. 9		0	09 1	4 1	6 17	N	S	32	9	405	1.0	•
217		0	.028		e. 3	00	Č	9		90	12 1	8 1	4 18	C	2	34	~	394	.7	
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219		6			.2	00	2	4.9	6	0	14 1	7 1	3 17	2	N	32	4	403		
220		3			0	66	2	9		-	101	2	0 18	C	C	32	9	407	1.2	
221		2	-		~	00	رص د	6.7		0	02 1	8 1	2 16	N	N	31	S	398		
222		2	.030		0.	0	3	9		0	09 1	974	0 16	N	N	30	CV	376	9	
223		3	02		.3	00	3	2		~	07 1	4 1	2 17	2	N	31	4	386		
224		4.			-	.66	2	6.2		0	02 1	4 1	3 15	N	N	32	9	414	1.1	
225		-			4.	000	3	~		6 C	13 1	7 1	8 18	N	N	33	5	390		
226		80			6.	000	3.	•		m	14 1		8 18	N	0	32	5	402		-
227		0			6	66	2	9		ın	03 1	4 1	2 18	2	N	33	9	420		- 40
228		-		•	6	00	3	7		9	13 1	9	3 18	C)	N	34	~	416	1,2	
229		6		8	9	00	30	9		N	05 1	9	0 15	2	N	34	9	398	60	
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231	13	59.1	.025		2.93	66	92.5	96.2	8.9	86 1	106 1	25 15	4 18	3 229	9 266	317	343	381	۲.	1.5
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TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

3 LOWER MISSISSIPPI MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN.

DIST.

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TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED 8 LOWER MISSISSIPPI--CONTINUED MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN. DIST.

PREMIUM-PRICE GASOLINE

ITEM	SAMP	ASTM 0287	ASTM D1266	ASTM D381	ASTM 0526	ASTM	ACTA	Σ ! + ! ∝ !	ASTM D323	O. E	AT	RE.	RCEN	ORRE T EV	CTED APOR	TED	09		RES	LUS
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251	S	60.2	0.003		3.13	90.66	93.1	4.96	9.6	90	107 1	120 1	41 1	62 2	10 25	55 31	9 34	6 393	-	•
5	5	0	1	•	8	6	2	9		4	90	20	38 1	6 2	1 2	0 3	3 3	5 37	-	-
5	6	1.			8	66	6	9		6	01	21	53 1	7 2	3 2	9 3	3	5 42	•	-
S	7	3	.032			0	2	. 9		មា	0.8	23	45 1	8	4 2	1 3	5	9 41	•	-
5	1	6			0.	00	2	9		2	90	23	48 1	4 2	4 2	9	1 3	8 41		•
S		2.	0			000	2			0	20	21	42 1	5 2	2	4 2	8	7 37	-	•
S	11	8.	.001		.6	.66	S	. 9		0	20	20	39 1	1 2	2 2	7 3	1 3	4 39	•	•
5	9	0	.034		2.95	0	-	S			11	21	39 1	60 2	7 2	1 3	9 3	2 39		•
5	m	2				00	S	9		-	90	22	49 1	77 2	2	6 3	8	3 41	•	2
9		-	-		7.	00	2	. 9		4	60	23	46 1	70 2	2 2	1 3	3	4 39	•	•
9	10	0	.036		3.09	0	2	. 9		0	10	23	49 1	72 2	0	4 3	4 3	2 40	9-1	1.1
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9	•	•	04		0.	00	2	9		60	03	26	52 1	81 2	8 2	2 3	6 3	8 41	1	10
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9		2	01		00	0	8	9		0	0.4	CVI	46 1	72 2	9	8	7 3	7 40	-	-
0	m	0			.5	66	9	. 9		9	01	£ 3	33 1	55 2	8 2	1 3	4-4 (A)	2 40	•	-
1		60.4	.021	•	0	100.0		96.3	9,1	06	106 1	121 1	4	70 2	17 2	8	0	9 39	•	101

TABLE 3. - MOTOR GASOLINE SURVEY. SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

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REGULAR-PRICE GASOLINE

		a.	=	×	EA	OCTAN	NE NUMB	BER	V P			0	ISTIL	LATION		ASTM	086			
	SAM	ASTM	ASTM	ASTM	ASTM	ES	OT	+	ASTM	TEMPE	ERATU	KE,	F CCURRE	ပ	TED .	7U 76	CMM	HG)		
ITEM	PLES	28	12	38	52	S	ASTR	1	32			PE	RCENT	⋖	PURA.	TED			RES	LOSS
		۵.	⊢ :	₩.	-	02699	2	N	LB	18P	5 1	0 2(30	50	20	06	95	OL.	24	7 4
9	4	es e	N		4 .	2	4	80		105 1	5 1	0	9	6	4	29	N	-	6.0	1.0
9	m	61.2	0.			S	5	89	0° 8		02 1	4 1	2 1	2 19	25	ന	368	404	90	
9	N	•			• 42	4	9	0			**	5 1	54 18	1 22	9	34	38	-	1.0	•
~		•				2	3	7	5		13 1	26 1	0 1	5 22	27	35			1.0	
~	m	61.2	.045		2.53	9	• 9	6	7.6	96	9 1	23 1	4 1	4 20	25	33	സ	-		1 . 1
272	m		.061			92.4	85.7	89.1	6.8	90	06 1	18 1	37 15	5 19	25	0 334	370	412	6 0	1.2
~	സ	2	.030		.8	2	5	80			0 1	21 1	0	0 20	25	33	6	~		
~	m	0	.013			2	9	0			08 1	21 1	-	1 21	27	36	30	CV	1.0	1.0
~	m	2	.015		. 8	2	5	0,		-	02 1	17 1	0 1	0 20	25	33	(A)	-		
~	6	0	05		.7	2		6			04 1	18 1	0 1	0 20	26	34	38	\rightarrow	8.8	
~	8	0	.049		7.	6	9	0		76		21		20		m		0	1.0	
7	e	-	.063		9.	2	S	6			0 1	22 1	1	8 20	25	33	37	41	0.	
~	-বা	61.0	.06A	•	2.22	2		80			08 1	22 1	43 16	6 21	5 27	S	378	40	1.0	1.7
90	6	0	690.		9.	2	9	0,			2 1	138	1 0	2 21	27	35	39	42	0.	
81	3	61.6	,039		.2	C	9	6		88	6 1	0	1	8 20	27	35	384	420	1.0	1.0
VER		61.5	.046		2	2	85.5		9.1	92	-	2	3	3 20	26	34	m	907	6.	1.6
	77																			

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED DIST. 9 NORTH PLAINS--CONTINUED MINN., N. DAK., AND S. DAK.

		ř	\supset	∑	EA	OCTA	NE NOW	מוצ	9	•			DIST	LLLA	LION	P A S	J W L	96			
	SAM	S	STA	ASTM	ST	ESP	10	¥ + X	-	TEM	PERA	TURE	LE 6	COR	ECT	0	760	N. W.	HG)	,	(
ITEM	الما الب	D287	D1266	10 C	0526 67641	AST	ASIM D2700	10	2 A	1 A D	5	10	2 1		A O C	RAT 707	00	20	ac a.	M M	S ×
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8	m	0.99	08		2.44	6	•	Š	°.	90	10	12	S	!	***	5	42	376 4	-	90	
00	m	5			0	0	2	. 9	6	30	10	12	5	~	-	5	54	64	0	0	
00				•		98	8	ر	12.	0	10	11	4	9	0	4	(L)		99	0	
8	m		O		9.	6	2	5	0	0	11	13	\sim	0	2	5	28	68	0		
8	m	3	CV	8	7	6	4	7	7	0	11	13	40	0	CV	S	25	09	80	0	
00	m	3.	2		4.	6	3	9	œ	90	10	12	S	~	-	S	56	5.0	06	0	
0	m	2	~	•		6	2	9	٥.	00	10	12	4	8	2	9	35	99	0		
9	~	4	-		6	80	2	5	œ	00	11	12	4	~	-	5	30	09	0	0	
0	m	5	~	•	.7	6	0	S	0.	00	10	12	SEP.	~	wel	4	30	62	0	0	
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6	m	3	C		6.	6	4 .		80	3 0	11	13	9	0	N	S	20	56	76	C	
294	4	61.1	.064		2.67	99.2	91.7	95.5	10.	6 93	109		149	173	218	251	320	340	375 1	0	1.9
0	m	5	~		4.	6	2	5	0,	6 0	10	12	5	~	-	4	56	64	02	0	
0	m	4	C	•	6.3	6	2	5	80	æ	10	12	4	~	-	S	22	09	0	0	
AVERAGE		64.1	.044		9.	99.4	92,3		6	-	107	126	152	177	u-l	S	27	09	193		

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FUR DIFFERENT BRANDS -- CONTINUED

DIST. 10 CENTRAL PLAINS NESTERN IDWA, NW MO., AND NORTHERN KANS.

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-	12	1.	4		9	2	5	6			0	-	35	51	46	22	38	3 4		0
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\rightarrow	6	+	4		5	4.	9	0			-	CV	38	54	8	48	31	0		
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31	3	0	.061		29.2	4 .	• 9	0			108	$^{\circ}$	44	6.4	0 4	4 8	31	4 9		
VERAGE		61.8		1	-		86.0		89	91	108	121		~	66	54	3	4 29	10	9

SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FUR DIFFERENT BRANDS -- CONTINUED

DIST. 10 CENTRAL PLAINS--CONTINUED
NEBR., CENTRAL AND WESTERN IDWA, NW MO., AND NORTHERN KANS.

			SS		2	0	0	~	m	80	9	7					9	r.	0,						
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	STM	0 760	0	06	0	2	C	4	309	2	\sim	0	3	$\overline{}$	\mathbf{e}	N	CV	-	m	CV	ന	\rightarrow	0	CV	322
	A	-	RAT		4	5	5	0	233	す	4	4	5	4	9	\triangleleft	S	4	⇉	S	~	9	⇉	S	253
	TION	ECT	VAP	20	-	0	-	3	207	0	-	0	-	444	C	0	α	0	$\overline{}$	-	-	3	0	4-4	213
	STILLATION	CURR	-	30	_	9		9	170	9	~	S	~	9	~	161	8	S	9	~	5	⊳	S	9	167
	DIST	la.	ERC	20	S	4		4	150	4	5	m	4	4	4		S	(L)	4	4	ന	4	സ	$\boldsymbol{\omega}$	145
N.F.		URE	α.	10		(VI		\rightarrow	129	$^{\circ}$	S		\sim	2	$^{\circ}$		S	S	$^{\circ}$	\sim	4	S	4		123
SOLINE		ERAT		S		0	2	0	115	0	-	0	0	-	ightharpoons		0		\leftarrow	-	0	0	0	0	109
E GA		TEMP		186					92																06
-PRIC	>	ASTM	32	L B	•				8.2														- 9		80.00
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		œ	4	0					0												0		C	0	6
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	•	N F	-4										-				-				-			-	
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	7	STM	12	-	0.	0	.023	0		0	0	,024	0	0	0	.021		01	.024	02	00	01	01	.017	.022
	:	TM A	87	П		0			٤,									0							
		A S			0	9	9	9	102	9	9	9	0	9	N	9	9	9	9	S	9	S	9	VO	62
			L		20	12	-	(73	e	10	un	(*)	œ	19		9	**		12		m	(F)	m	m	
			ITEM		317	-	-	CV	N	S	CV	CV	CV	CV	(VI	(N	CV	3	3	3	S	3	m	3	AVERAGE

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

	N TEX.
	NORTHERN
	AND
	ARK.
	* WESTERN ARK . * AND NORTHER!
	MO.
	玄の
ATNC	SOUTHERN KANS. SW MO.
DIST. 11 COUTU DI ATMS	SOUTHER
-	4
DICT	

R-PRICE GASOLINE	٧ ٧	F CCORRECTED TO 760 MM HG)	323 PERCENT EVAPORATE	B IBP 5 10 20 30 50 70 90 95 EP %	.4 87 106 115 140 160 204 261 348 381 425 0.8 0.	7 90 107 121 141 163 209 266 342 384 422 1.0 1.	. ~	.4 95 114 124 140 155 194 243 329 367 417 .9 .	.2 94 114 127 146 161 210 270 352 388 425 1.	.9 94 110 124 140 158 206 270 330 391 450 1.0 .	.1 87 106 121 140 157 203 265 347 380 428 1.0 1.	.3 90 112 124 149 170 209 254 318 360 396 .9 1.	.7 86 106 119 138 157 200 262 337 367 412 1.1 ·	.7 88 104 117 136 154 196 254 339 377 416 1.0 1.	.8 93 112 126 145 164 210 274 344 368 400 1.0 ·	.0 95 111 124 141 160 204 263 342 371 411 ,9 .	.7 94 110 123 143 163 206 259 340 374 412 1.0 1.	.5 96 116 129 146 164 200 240 315 360 410 .9 ·	.5 95 118 129 145 161 195 248 344 376 422 .6 .	.5 94 107 118 134 148 184 237 326 366 411 8 1.	.5 90 109 123 144 161 204 262 342 374 413 1.1 ·	.3 92 108 123 141 160 203 263 341 378 412 1.1 1.	6 91 110 125 148 170 213 262 329 363 399 1.0 1.	.6 86 108 120 136 156 205 266 348 384 428 1.0 ·	.5 95 113 129 150 170 210 256 318 347 400 1.0 1.	0 92 110 123 142 161 203 259 33	
REGULAR	TANE NUMBER	MDT. R+M	STX	9 027	86.9	86.0 89.	6.68 89.6	86.6 90.	85.7 89.	86.9 90.	86.3 89.	85.9 89.	86.9 90.	86,2 89,5	86.3 90.	86.7 90.	86.1 89.	88.3 91.	87.2 90.	86.5 89.	86.0 89.	86.1 89.	86.3 90.	87.6 91.	86.4 89.		
	UM, LEA	STM ASTM RES	381 D526 AS	G G/GAL D2	3.34 9	1.99 92	2,34 92.	2.47 9	1.96 9	3.16 9	2.83 9	2.42	2.48 9	2.57 9	1.73 9	2.71 93	2 15 9	2.73 9	2.78 9	2.48 9	2.58 93	2.79	3.03 94	3,13 94	3.20 9	.61 9	
	R., SULF,	ASTM ASTM A	287 D1266	PI EI	3.1 0.05	0.0 0.03	61.6 .023	3.3 .04	3.3 .04	2.4 .06	1.1 .04	2.3 .04	1.5 .03	2.5 .02	1.6 .02	1.0 .05	2.1 .03	4.7 .01	0.8 .02	3.4 .04	0.5 03	1.6 01	0.0	2.0 0.5	2.1 .02	1,9 03	
		- 1	LLI LL		337 6	80	6	0	**	2	m	4	ທຸ	· ·		a o	6		-	2	3	4	5	9	357	AVERAGE	AMPI F

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 11 SOUTH PLAINS--CONTINUED SOUTHERN KANS. SW MO. WESTERN ARK. AND NORTHERN TEX.

PREMIUM-PRICE GASOLINE

6.3 9.1 PERFORM TENTER TOTAL T	GR., SULF, GUM, LEAD, OCTANE N	SULF. GUM, LEAD, OCTANE NUM	F. GUM, LEAD, OCTANE NUM	UM. LEAD. OCTANE NUM	EAD, OCTANE NUM	OCTANE NUM	NON	1 0D L	1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	VP.			0	ISI	LAT	Z	ΣI	086			
2700 2 LB IBP 5 10 20 30 50 70 90 95 EP 8 8 8 2 3 95.4 9.1 91 108 125 150 175 217 253 340 377 428 0.8 1.2 2.6 95.9 9.1 9.1 108 125 147 173 217 255 326 362 410 1.1 1.2 2.9 95.9 9.1 90.1 101 122 147 173 217 255 326 362 410 1.1 1.2 2.9 96.1 90.2 91 110 129 156 183 230 271 341 373 413 1.0 1.5 2.3 95.8 95.8 95.2 91 110 129 156 183 230 271 341 373 413 1.0 1.5 2.3 96.4 8.6 9.4 87 103 122 148 173 219 260 316 354 431 1.0 1.5 2.9 96.1 9.9 87 103 121 148 173 221 264 340 374 420 1.0 1.5 2.9 96.1 9.9 87 103 121 148 173 221 264 340 374 420 1.0 1.5 2.9 96.1 9.9 87 103 121 126 152 177 215 262 335 374 419 1.0 1.5 2.7 96.0 9.0 91 108 125 149 174 215 249 325 366 406 1.0 1.6 7.8 95.8 95.9 9.1 92 110 125 155 174 210 240 298 360 418 .5 5.5 95.8 95.0 8.7 90 115 129 152 174 215 249 325 366 406 1.0 1.6 95.8 95.0 8.8 90 105 124 150 176 225 262 333 353 396 .9 1.0 90.0 90 114 129 152 176 225 262 331 354 407 91 91 91 90 105 128 152 176 225 262 331 354 407 91 91 91 91 91 90 105 128 152 176 226 262 331 354 407 91 91 91 91 91 91 91 91 91 91 91 91 91	PLES D287 D1266 D381 D526 ASTM A	17 ASTM ASTM ASTM RES. 87 D1266 D381 D526 ASTM	66 D381 D526 ASTM	381 0526 ASTM	526 ASTM	STE	~ ~	MUTA	X :	2 ×	N N	ERATU	KE PE	RCEN	RRE	POR	ED ~	0	SI	لما	0.5
96.3 9.1 91 108 125 150 175 217 253 340 377 428 0.8 1. 95.9 95.9 9.1 90 106 122 147 173 217 255 326 362 410 1.0 1.0 96.1 99.2 9.1 90 106 122 147 173 217 255 326 362 410 1.0 1.0 96.1 10.0 87 103 122 148 173 219 260 316 350 392 1.9 1.0 96.4 9.2 91 110 129 156 183 230 271 341 373 413 1.0 1.0 96.4 9.2 9.1 110 129 156 183 230 271 341 373 413 1.0 1.0 96.4 9.2 9.4 97 103 121 148 173 221 264 340 374 420 1.0 1.0 1.0 96.8 9.4 97 103 121 148 173 221 264 340 374 420 1.0 1.0 1.0 96.8 9.4 97 103 121 148 173 221 264 340 374 420 1.0 1.0 1.0 96.8 9.4 97 105 125 149 176 225 262 335 374 419 1.0 1.0 1.0 96.8 9.7 90 115 125 149 174 215 256 319 346 406 1.0 1.0 1.0 96.8 9.7 90 115 129 152 175 224 269 336 440 1.0 1.0 1.0 96.0 9.0 9.0 105 124 150 176 225 262 331 354 4019 1.0 1.0 96.0 9.0 9.0 105 124 150 176 225 262 331 364 4019 1.0 1.0 96.0 9.0 9.0 105 124 150 176 225 262 331 364 393 398 9.7 9.0 105 124 150 176 225 262 331 364 393 398 9.7 9.0 106 124 150 175 226 261 313 341 393 3.5 404 9.0 106 124 129 173 216 255 320 355 404 9.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	PI WT % MG G/GAL D2699 D	I WT & MG G/GAL D2699 D	X MG G/GAL D2699 D	MG G/GAL D2699 D	/GAL D2699 D	2699 D		2	63	69	8		0 2	0 3	ະນ	7			a_	96	≥€
2.3 95.4 9.7 88 102 118 153 179 222 261 323 358 392 1.0 2.2 2.6 95.9 9.1 90 106 122 147 173 217 255 326 362 410 1.1 1 1 2 2.9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	63.2 0.056 - 3.13 99.7	.2 0.056 - 3.13 99.7	056 = 3.13 99.7	3.13 99.7	13 99.7	7.6	0	2	9			90	25 1	20	75 2	7 2	34	37	N		
0 95.9 9.1 90 106 122 147 173 217 255 326 362 410 1.1 1. 1. 9 96.1 9.2 91 111 123 143 159 204 246 316 350 392 91 1. 9 96.1 10.0 87 103 122 148 173 219 260 316 350 392 91 1. 0 1. 9 96.4 8.6 9.2 91 110 129 156 183 230 271 341 373 413 1.0 1. 9 96.4 9.2 99 111 126 152 177 211 237 317 366 406 1.0 1. 9 96.1 9.9 87 104 120 149 176 225 262 335 374 419 1.0 1. 9 96.7 8.4 97 106 117 135 155 262 335 374 419 1.0 1. 9 96.7 8.4 97 106 125 149 174 215 256 235 364 406 1.0 1. 9 96.7 9.0 91 108 125 149 174 215 256 335 347 405 95 91 95.9 9.1 92 110 128 152 175 224 269 336 347 405 95 91 96.6 8.8 90 105 124 150 176 225 265 331 364 407 91 91 96.0 8.8 92 112 128 153 176 214 244 301 336 381 99 96.4 8.8 90 105 124 150 176 226 261 313 341 393 95 9.1 96.0 9.1 90 106 123 147 171 211 240 314 358 410 1. 1 96.3 97.1 96.3 90 106 123 147 171 211 240 314 358 410 1. 1 96.3 90 106 129 173 216 255 320 355 404 90 1.	59.7 .011 0 2.61 98.	.7 .011 0 2.61 98.	011 0 2.61 98.	2.61 98.	.61 98.	80		2	5			02	18 1	53	79 2	2	32	35	0		
3.0 96.1 9.2 91 111 123 143 159 204 246 316 350 392 .9 1. 2.8 96.4 8.6 92 108 122 148 173 219 260 316 354 431 1.0 1. 2.8 96.4 9.2 91 110 129 156 163 230 271 341 373 413 1.0 1. 2.9 96.4 9.2 99 110 129 156 163 230 271 341 373 413 1.0 1. 2.9 96.4 9.2 89 111 126 152 177 211 237 317 366 406 1.0 1. 3.0 96.8 8.4 87 104 120 149 176 225 262 335 374 419 1.0 1. 2.7 96.0 9.0 91 108 125 151 173 215 256 335 374 419 1.0 1. 2.8 95.9 9.1 92 165 125 175 225 262 335 364 406 1.0 1. 2.8 95.9 9.1 92 160 126 152 175 224 269 325 366 406 1.0 1. 2.8 96.6 8.8 90 105 124 150 176 225 265 331 364 407 .9 1. 2.9 96.6 8.8 90 116 129 152 175 224 269 338 374 405 .5 .5 .6 .6 .6 8.8 90 105 124 150 176 225 265 331 364 407 .9 1. 2.9 96.6 8.8 90 116 129 152 176 226 261 313 341 393 .5 .9 .1 .9 10. 108 129 152 176 226 261 313 341 393 .5 .9 .1 .9	61.8 .028 - 2.78 99.	.8 .028 - 2.78 99.	028 - 2.78 99.	2.78 99.	.78 99.	6		2	5			90	22 1	47	73 2	7 2	32	36	-	•	
2.9 96.4 8.6 92 108 122 148 173 219 260 316 354 431 1.0 1. 2.8 96.4 8.6 92 108 125 151 177 225 259 313 336 402 77 2. 2.3 95.8 9.2 91 110 129 156 163 230 271 341 373 413 1.0 1. 2.4 95.8 9.4 87 103 121 148 173 221 264 340 374 420 1.0 1. 3.0 96.8 8.4 87 106 117 135 155 200 230 263 296 337 88 8. 3.4 96.7 8.4 93 112 125 151 173 215 256 319 346 401 6. 3.4 96.8 8.7 90 91 108 125 149 174 215 296 337 88 8. 3.8 95.9 96.1 92 100 125 152 175 225 265 329 347 405 85 8. 3.8 95.9 96.0 88 8 92 112 128 151 175 225 265 323 353 398 8. 3.4 96.6 88 8 92 112 128 153 175 224 264 301 336 361 89 106 124 150 176 225 265 331 364 407 89 106 124 150 176 225 265 331 364 407 89 106 124 150 176 226 261 313 341 393 8.5 8. 3.4 96.6 88 99 116 129 152 176 226 261 313 341 393 8.5 8. 3.7 97.7 99.0 89 106 124 150 176 226 261 313 341 393 8.5 8.	63.1 .020 0 2.73 99.	.1 .020 0 2.73 99.	020 0 2.73 99.	2.73 99.	.73 99.	0.		3	9			11	23 1	643	59 2	4 2	31	35	92		
2.8 96.4 8.6 92 108 125 151 177 225 259 313 336 402 .7 2. 2.3 95.8 9.2 91 110 129 156 163 230 271 341 373 413 1.0 1. 3.5 96.4 9.2 99.1 110 129 156 163 230 271 341 373 413 1.0 1. 2. 4 95.8 9.4 87 103 121 148 173 221 264 340 374 420 1.0 1. 2. 9 96.1 9.9 87 104 120 149 176 225 262 335 374 419 1.0 1. 3. 0 96.8 8.4 87 106 117 135 155 200 230 263 296 337 .8 4.1 96.0 9.0 91 108 125 149 174 215 249 325 366 406 1.0 1. 0 1. 3.3 96.7 9.2 86 101 114 129 175 225 262 339 374 419 1.0 1. 3. 3 96.7 9.2 86 101 114 129 175 225 262 331 364 407 .9 1. 3. 9 96.6 8.8 90 105 124 150 176 225 262 331 364 407 .9 1. 2. 9 96.0 8.8 92 112 128 153 176 214 244 301 336 381 .9 1. 3. 9 96.4 8.8 90 114 129 152 176 226 261 313 341 393 .5 3. 9 9.1 90 106 123 147 171 211 240 314 358 410 1.1 3. 3. 96.3 90 106 124 149 173 218 255 320 355 404 .9 1.	3 62.0 .050 - 2.96 99.	.0 .050 - 2.96 99.	050 - 2.96 99.	2.96 99.	.66 96.	0,		8	•	0		03	22 1	8 4	73 2	9 2	31	35	31		
2.3 95.8 9.2 91 110 129 156 183 230 271 341 373 413 1.0 1. 3.5 96.4 9.2 89 111 126 152 177 211 237 317 366 406 1.0 1. 2.4 95.8 9.4 87 103 121 148 173 221 264 340 374 420 1.0 1. 3.0 96.8 8.4 87 104 120 149 176 225 262 335 374 419 1.0 1. 3.4 96.7 9.0 91 108 125 151 173 215 256 319 346 401 .6 1.0 1. 4.1 96.8 8.7 90 115 129 152 174 215 249 325 366 406 1.0 1. 2.8 95.9 9.1 92 100 128 152 175 224 269 336 401 .5 .5 .3 .3 95.9 99.1 92 100 128 153 175 225 262 331 364 407 .5 .5 .5 .5 .5 95.8 8.8 90 105 124 150 176 225 262 331 364 407 .9 1. 2.8 96.6 8.8 90 105 124 150 176 225 262 331 364 407 .9 1. 2.9 96.4 8.8 90 114 129 152 176 226 261 313 341 393 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5	58.8 .015 - 3.38 100.	.8 .015 - 3.38 100.	015 - 3.38 100.	3.38 100.	.38 100,	000		2	•			90	25 1	51	77 2	5	31	3	02	•	
3.5 96.4 9.2 89 111 126 152 177 211 237 317 366 406 1.0 1.2.2.4 95.8 9.4 87 103 121 148 173 221 264 340 374 420 1.0 1.2.2.9 96.1 9.9 87 104 120 149 176 225 262 335 374 419 1.0 1.3.3.0 96.8 8.4 87 106 117 135 155 200 230 263 296 337 .8 .3.4 96.7 8.4 93 112 125 151 173 215 256 319 346 401 .6 .2.3 96.0 8.7 90 115 129 152 174 210 240 298 360 419 .5 .3.3 96.7 9.2 86 101 114 136 162 235 278 326 347 405 .5 .2.8 96.0 8.8 92 110 128 152 176 225 266 323 353 398 .9 1.2.3 96.0 8.8 92 112 129 152 176 225 266 323 353 398 .9 1.2.3 96.0 8.8 92 112 129 152 176 225 266 331 336 381 .9 1.2.3 96.0 8.8 90 114 129 152 176 226 261 313 341 393 .5 .3.4 96.0 8.8 90 114 129 152 176 226 261 313 341 393 .5 .3.1 96.3 99.1 90 106 124 149 173 218 255 320 355 404 .9 1.3.3 96.3 96.3 96.3 96.3 96.3 96.3 96.3	60.4 .025 - 3.03 99.	.4 .025 = 3.03 99.	025 - 3.03 99.	3.03 99.	.03 99.	66		5	5			10	29 1	56	83 2	0 2	34	3.	13		
2.9 96.1 9.9 87 103 121 148 173 221 264 340 374 420 1.0 1. 3. 0 96.8 8.4 87 104 120 149 176 225 262 335 374 419 1.0 1. 3. 0 96.8 8.4 87 106 117 135 155 200 230 263 296 337 8. 3. 3. 4 96.7 8.4 93 112 125 151 173 215 256 319 346 401 8. 6 8. 1 96.8 8.7 90 115 129 152 174 215 249 325 366 406 1.0 1. 4.1 96.8 8.7 90 115 129 152 174 215 249 325 366 406 1.0 1. 3. 3 96.7 9.2 86 101 114 136 162 235 278 326 347 405 8. 5 8. 9 96.6 8.8 9 90 11 92 110 128 152 175 224 269 338 374 419 1. 3. 3. 96.6 8.8 9 90 116 124 150 176 222 262 331 364 407 8. 9 1. 2. 9 96.0 8.8 9 90 114 129 152 176 222 262 331 336 340 8. 9 90 114 129 152 176 226 261 313 341 393 8. 9 1. 9 1. 9 1. 9 1. 9 1. 9 1. 9 1. 9	65.8 .042 1 2.43 99.	.8 .042 1 2.43 99.	042 1 2.43 99.	2.43 99.	.43 99.	6		3.	9			11	26 1	52	77 2	1 2	31	36	90		
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3.0 96.8 8.4 87 106 117 135 155 200 230 263 296 337 .8	61.5 .026 0 3.17 99.2	.5 .026 0 3.17 99.2	026 0 3.17 99.2	3.17 99.2	.17 99.2	9.2	5	ò	9			0 4	20 1	64	76 2	5 2	33	37	19		
3.4 96.7 8.4 93 112 125 151 173 215 256 319 346 401 .6 4.1 96.8 8.7 90 115 129 152 174 215 249 325 366 406 1.0 1. 3.3 96.7 9.2 86 101 114 136 162 235 278 326 347 405 .5 2.8 95.9 9.1 92 110 128 152 175 224 269 338 374 405 .5 3.4 96.6 8.8 90 105 124 150 176 225 265 323 353 398 .9 1. 2.9 96.0 8.8 92 112 124 150 176 225 262 331 364 407 .9 1. 2.9 96.0 8.8 90 114 129 152 176 226 261 313 341 393 .5 5.7 97.7 9.0 89 106 124 149 173 218 255 320 355 404 .9 1.	62.8 .007 - 1.45 100.6	.8 .007 - 1.45 100.6	007 - 1.45 100.6	1.45 100.6	.45 100.6	9.00	O.	3	9			90	17 1	35	55 2	0 2	26	29	37		
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4.1 96.8 8.7 90 115 129 152 174 210 240 298 360 419 .5	65.1 .021 0 2.40 99.2	.1 .021 0 2.40 99.2	021 0 2.40 99.2	2.40 99.2	.40 99.2	9.2	٥.	2	9			90	25 1	64	74 2	5 2	32	36	90		
3.3 96.7 9.2 86 101 114 136 162 235 278 326 347 405 .5 .5 .8 95.9 9.1 92 110 128 152 175 224 269 338 374 419 1.1 2.5 95.8 8.7 89 106 124 150 176 225 266 323 353 398 .9 1. 3.4 96.6 8.8 90 105 124 150 176 222 262 331 364 407 .9 1. 2.9 96.0 8.8 92 112 124 150 176 222 262 331 364 407 .9 1. 2.9 96.0 8.8 90 114 129 152 176 226 261 313 341 393 .5 .9 1. 3.1 96.3 9.1 90 106 123 147 171 211 240 314 358 410 1.1 .	3 65.5 .013 - 3.09 99.4	.5 .013 - 3.09 99.4	013 = 3.09 99.4	3.09 99.4	4.66 60.	9.4	S	4 .				15	29 1	52	74 2	0 2	29	36	10		
2.8 95.9 9.1 92 110 128 152 175 224 269 338 374 419 1.1	55.9 .015 - 3.02 100.1	.9 .015 - 3.02 100.1	015 - 3.02 100.1	3.02 100.1	.02 100.1	00.1	0	9	9			01	14 1	36	62 2	5 2	32	34	0		
2.5 95.8 8.7 89 106 124 150 176 225 266 323 353 398 99 10 2.8 96.6 8.8 90 105 124 150 176 222 262 331 364 407 99 10 2.9 96.4 8.8 90 114 129 152 176 214 244 301 336 381 99 10 5.7 97.7 9.0 89 106 123 147 171 211 240 314 358 410 1.1 3 3.1 96.3 9.1 90 108 124 149 173 218 255 320 355 404 91	6 62.4 .026 - 2.90 98.9	.4 .026 - 2.90 98.9	026 - 2.90 98.9	2.90 98.9	6.86 06.	6.8	•	2	5			10	28 1	52	75 2	4 2	33	37	-		
3.4 96.6 8.8 90 105 124 150 176 222 262 331 364 407 ,9 1. 2.8 96.0 8.8 92 112 126 153 176 214 244 301 336 381 ,9 1. 2.9 96.4 8.8 90 114 129 152 176 226 261 313 341 393 ,5 . 5.7 97.7 9.0 89 106 123 147 171 211 240 314 358 410 1.1 . 3.1 96.3 9.1 90 108 124 149 173 218 255 320 355 404 ,9 1.	8.7 .019 - 2.88 99.	.7 .019 = 2.88 99.	019 - 2.88 99.	2.88 99.	.88	6		2	5			90	24 1	20	76 2	5 2	32	35	0		
2.8 96.0 8.8 92 112 128 153 178 214 244 301 336 381 .9 1. 2.9 96.4 8.8 90 114 129 152 176 226 261 313 341 393 .5 . 5.7 97.7 9.0 89 106 123 147 171 211 240 314 358 410 1.1 . 3.1 96.3 9.1 90 108 124 149 173 218 255 320 355 404 .9 1.	8 62.1 .030 - 3.07 99.	.1 .030 - 3.07 99.	030 - 3.07 99.	3.07 99.	.07 99.	6		3	9			0.50	24 1	50	76 2	2	33	36	0		
2.9 96.4 8.8 90 114 129 152 176 226 261 313 341 393 .5 . 5.7 97.7 9.0 89 106 123 147 171 211 240 314 358 410 1.1 . 3.1 96.3 9.1 90 108 124 149 173 218 255 320 355 404 .9 1.	61.7 .021 0 3.06 99.	.7 .021 0 3.06 99.	021 0 3.06 99.	3.06 99.	.06 90.	6		2	9			12	28 1	53	78 2	4 2	30	33	00		
5.7 97.7 9.0 69 106 123 147 171 211 240 314 358 410 1.1 . 3.1 96.3 9.1 90 108 124 149 173 218 255 320 355 404 99 1.	3 58.9 .022 - 3.30 99.9	.9 .022 - 3.30 99.9	022 - 3.30 99.9	3,30 99,9	.30 99.9	6.6		8	9			14	29 1	52	76 2	8	31	34	0		
3.1 96.3 9.1 90 108 124 149 173 218 255 320 355 404 ,9 1.	64.8 .047	.8 .047 - 3.90 99.	047 - 3.90 99.	3.90 99.	.90 99.	6	_	5.	7			90	23 1	47	71 2	1 2	31	35	-		
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TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

REGULAR-PRICE GASOLINE

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	⋖	ASTM	ASTM	ASTM	ASTM	ES	10	₩+ ₩	ASTM	TEMP	ERAT	URE,	٤ (((CORRE	ECTED	T0	760	MM	(5H		
ITEM	PLES	28	N	38	52		ASTM	:	0323			Р	ERCEN	YT E	VAPORA	ATED			oc.	ES	LOSS
			-	MG	5/	02699	27	2	LB	IBP	2	10	20	30	50 7	0	6 06	5 E	Q.	≫	34
~	7	•	0.037		**	4	7	0		9.6	111	ın	4 1	57	16	53	41	73	0	0	6.
8	m	0			4.	4	9	0			0	m	44	0	15	63	27	55	-4	0.	
00	S	0			-	4	9	0			4	~	47	99	07	54	30	9	0		1.0
8	m	60.7	•		2.56	£	~	1.			111	2		20	11	24	321 3	51 3	86	80	.2
8	m	-			80	-	~	0,			-	9	41	~		41	31	71	15		• 4
8		0	S		S	4	9	0			111	124	2	62	0.5	64	34	29	9	0	6.3
385	10		.029		2.99	94.1	87.4	9006	8.7	95	113	127	45	61	199 2	8 4		9	10		3
00	9	4			-	(L)	~	0			-	56	68	51	87	45	56	54	94		•
8	9	8	0		~	4	~	0			113	6	51	-	12	55	C	09	\rightarrow		
8	4	0	.035		.00	4	~	0			~	_	42	58		61	57	06	16		• 0
∞	m	2			.2	4	~	0			0	_	35	51	93	48	38	20	-		8
0	0.	0	0		. 8	4	~	0			115	0			90	63	37	63	90	0	-
0	10	•	.028		2.82	4	9	0			13	59	0	68	90	51	315 3		8	0	1.0
0		•	-	8	0.	4	87.1	0			S	_	35	_		E 4	19	54	0	0.	. 1
AVERAGE		61.5	.023		10	94.1	87.1	9.06	8.6	76	112	126	143	161	202 2	53	331 3	162 4	05 1	0	0

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

CONTINUED
TEXAS C
SOUTH
DIST. 12

		GR.,	SULF,	Σ	EA	OCTA	NE NUME	BER	γP			-	DISTI	ISTILLAT	TIONS	AST	M D8	9		
	SAM	ASTA		ASTR	ASTM	ES	10	R+M	ASTM	TEMP	ERATI	UKE		CORRE	TE	-		I	(9)	
ITEM	ш	28	12	38	52	ALSA			32			PE	RCE	NT EV	AP	A		-	28	S
		API	8 L 8	D Z	5/	56	02700	C4	LB	186	2	10 2	20 3	30 5	2 05	6 0	0	5	æ	
393	7	6.65	0.016		3.26	0	2	6		92	109	123	-	-	80	ın	6 3	7	54 1.	0 1.
394	6			8		0	2	9		88	***	32	09	84	23	0	5	1 3	9	9 1.
395	0	9	.012		.20	66	°	9		92	14	30	59	85	24	4	80	e et	4	0 1.
396	m		•			0	5	9		06	-	0	58	82	21	00	6	7	(m)	9 1.
397	6	61.0			96.	66	91.0	95.4	0.6	06	90	23		162 2	15	9	5 3	5	0	7 1.
398	10		.010		.71	00	5	. 9		26	2	9	43	09	70	0	6 3	3	47 1.	0 1.
399	0	6	.016		.38	0	8	,		26	13	27	47	67	60	0	5	1 3	N.	9 1.
400	9		•	•	.16	66	3,	9		92	90	19	36	57	10	4	7 3	0	5	0 1.
401	•0	-		8		6	3	9		96	_	er)	56	80	20	'n	4 3	7 4	-	•
402	4	S	.001	•	.13	0	3	9		96	60	22	43	99	30	~	7 3	9	(7)	9 1.
403	6		•		.28	.66	8	. 9		6	11	27	47	67	11	0	3	9 3	9	8 1.
404	0.	9	-		96.	00	2	9		95	12	29	52	75	25	00	7 3	2 3	7	0 1.
405	10	8	.014	•	95	0	92.5	• 9			ις.	0	52	75	17	4	8	2	75 1.	0 1 0
406	9	60.7	•	•	, 36	00	2	9		106	116	00	51	74	219 2	58 3	16 3			9
VERAGE		59.4	.012	8	0.	100.0	92.5	96.3	8.8	76			149 1	171 2	17	9	16 3	2 3	96	-

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

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AVENAGE DATA TON DITTEREN CHANGOLLONIANCE	N		REGULAR-PRICE GASOLINE
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Z	OKTATES OKT		
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M L	SAMP	ASTM	ASTM	ASTA	ASTM	SP	MOTA	02 B	ASTE	TEMP	ERAT	URE,	F C	CL	CTE	101	760		69	0	
4	d Ji	- C	- I-	E	1 0	500	27	N	L 6	IBP	9		20	-0		J L	6 0	N M	Q.		3 64
0	9	0	•		80		4	80				N	45	62	03	65	20	80	25		-
0		0	4	-	9.	-	4	~			-	3	56	26	19	20	47	83	15	.0 1	
0	24	6	.05	2		2	5	0		0	-	C	48	69	17	0.2	9 4	17	60		
410	9	60.8	.041		1.62		85.4	88.8	0.0	104	119	132	150	167	207	261 3	151 3	194 4	118 1	1.	
-	25		03	0	ıÜ.	2	9	6			C	S	64	29	0.4	57	35	16	0	6.	6.
-		0	~	0	80	6	5	6		0	-	C	45	99	10	0 2	51	82	-		-
-		0	•		9	-	4	8	8.6		-	C	9 4	65	13	72	44	84	N	0	1.0
~	2	3			0	-	5	80											8		
-				•	0	-	5	8		0	127	38	52	29	0.1	51	39	~	444	0.0	
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***		60	.024		6	2	. 9	6		104	CV	32	64	99	90	68	43	62	0	0	00
-		0		•	.2	-	4	8		0	qmi	27	9 4	68	17	72	40	74	30		0.
		0	3	~	6	2	5	6		0	-	30	8 4	69	90	59	44	7.8	21		•
S	25	8.	.041	2	6.	3.	5	6	7.5	101	115	132	0	168	0	264 3	145 3	181 4	117 1	0.	3
2		6	3	**	6	2	S	6		0	-	34	56	92	20	7.1	42	73	20	0	
0		8	03	m	2.03	d	5.	0	8	0	-	30	25	73	19	0	41	4	21	0.	•
VERAGE		60.5	.041		2.07	92.3	85.4	88.9	4.9	100	118	131	149	168	-	264 3	43 3	179 4	116 1	0.0	0

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 13 SOUTH MT. STATES -- CONTINUED

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ALIF.				LOSS	346									0.		. 7					1.7		
000				RES	36		•		1.0		6.	1.2	- 10	1.0			- 4	1.0			1.0	1.0	
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112.			DI	RAT	20	9	~	9	264	5	9	9		4	5	5	9	255	V	5	9	261	
A AR		TIO	ECT	VAPO	20	N	3	N	217	CV	CV	CV		-	-	C	CV	220	CV	-	C	221	
UTAH		ILL	COR	Z	30	00	9	\sim	174	~	\sim	~		9	~	8	~	178	~	~	~	177	
0.0		DIST	la.	u	20	S	5	S	153	5	4	in		4	S	S	5	154	5	S	S		
COL	NE		URE	0_	10	(4)	3	B	131	S	S	S		B	പ	ന	S	132	E	3	3		
EX.	SOLIA		ERAT		2	- 446	***	-	117		-	-		-	-	S	\rightarrow	119	-	444	-	117	
Σ	E GA		TEMP		186				9 6					100	0	102	96	96	16	100	0	46	
EX.	-PRIC		S	32	LB				ສຸ									8,2				•	
- 3	MIUM	OC.	Z+ X	8	2	4	3	5	. 4	. 9	9	3,	9	95.1	9	. 9	9	5	5	5	5	5.1	
ESP	PRE	E E	_	Σ	00			_	_	_				9				_	_	_		5	
HANDLE			O X	S	N	90	68	91,	90	92	92	88	93	91.	93	92	89	92	92.	91.	91.	91.	
PAN.		OCT	FS	ST	02699	. 0	-	6	7.	6	6	7	6	98.6		6	7	8	6	8	6	98.6	
TEX		AD.	-	S	9	37	7.8	73	50	77	15	02	85	96	72	89	32	7.1	28	62	80	59	
AND		, LE	<u>α</u>	<u> </u>	5	2.	-1	N	2	8	9	3	2		2	2	2	2	2	2	2	2.	
OKLA.		GCM	AST	038	Œ				***	ო		8	•	•				**	N	N	0	-1	
KANS.		SULF,	SIE	12	_		3	02	.020	S	Þ			.030		.023		.025	S	-	,022	2	
T T		GR.	ASTM	28	Q		6	6	1.	-	2		3,	64.4	9	8		2		+		61.4	
			SAM	LES	,		0	4		2	2		N	21	2	0	m	-	2	-	2		258
				ITEM		CV	C	S.	2	S.	2	C	3	431	3	3	3	3	3	3	438	VER	SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 14 NORTH MT. STATES
WYO., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

REGULAR-PRICE GASOLINE

		L055	o-R	6.0	1.0	1.1	1.3		o.	1.4	2 . 1	100		1.3	1.1		1.2	
		RES	36	6.0							0.		•	1,2	•		1.0	
	HG)		EP.	407	423	408	404	411	424	416	408	414	404	399	415	424	412	
986	X X		95	~	373	~	~	9	1	~	~	9	9	~	369	0	373	
STMD	760		06	344	336	343	347	333	334	339	342	327	334	344	331	344	338	
A a	-	ORATE	20	10	252	9	~	S	5	5	~	S	9	-	5	5	262	
ATION	ECT	AP	20		202		-	0	0	0	-	0	CV	-	0	0	209	
TILL	0 8		30	168	9	170	9	9	9		169	9	~	170	161	167	166	
DIS	L	RC	20		143		4		4		4		S	4	4		145	
	TURE		D M	124	CVI	CA	CV	123	125	C	S	121	S	C	CV	128	125	
	PERAT		n	112		116	4	0			-	-	-		-	-	113	
	TEMF		185		94	100	93	94	6	806					96		95	
۷ 9	ASTM	32	8	9.4	9.2			-						9.1			9.1	
ER	¥ + X	8	~	6.98	90.5	88.6	8	0.	6	6	6	0	6	8	6	0	89.4	
IE NUMB	-0	X	27		9	85.1	3	5	,	5	4	9	5	4.	. 9	•	85,5	
OCTAN	RESA	S	56	ω,	93.6	2	9	3.	3	2	4	3	2	3	'n	3	93.3	
EA	ASTM	22	5/	0	2.27	5	0	.7	. 8	-	-	2	4.	0.	•	.3	1.99	
	MLSA	m	E G	Q	0	0	0		8	0	2	0		0			0	
SULF		01266	₩ —	0	0	9	80			,024	060.	.040	.010	090.	.050		.055	
œ	ASTM	28	Q.				0	•	-	2	0	\sim	-	-:	-		61.3	
	A M	PLES	1		4				9	12 6	20		7	11	9	6	_	8.4
	1	ITEM		439	044	441	442	443	444	445	446	447	448	644	450	451	AVERAGE	SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

DIST. 14 NORTH MT. STATES -- CONTINUED
WYO., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

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		œ	J N	3	EA	OCTANE	NE NUMB	BER	>				DIST	ILLA	DISTILLATION,	ASTM	FM DB	96			
	SAM	ASTM	ASTM	ASTM	ASTA	RESP	MOTA	+	ASTM	TEMP	ERA	TURE		CORR	CORRECTED		760	Σ	HG)		
ITEM	4	28	12	36	2	S	ASTA		(D)			٩	PERCENT	الدا ح ح	VAPORA	KATE					LOSS
		Q.	-	Ø.	5	02699	02700	~	9	189	5	10	20	30	20 2	02	06	95	O. W	346	34
L/U	9	4.	(1)	0	9	8.66	6	4		9.4	109	125		S	12	241		0	395	0.0	4
5	4	5	.02		4		ω,	9		92	112	124		7.1	15	39	18	4	107	-	
S	**	4.	.010	C4	-	98.	-	S		26	115	131	157	~	21	26	34	75		-	. 4
S	0.	4.	4	0			6	4		66	112	126		73	11	41	11	20			
5	9	5			6		-	5		9 2	111	126	2	•	12	42	21	63		-	.2
457	9				8	98.9	2	95.7		06	109	128	00	85	2			4			00
S	13	+1	.020	0	5		-	S		76	109	126	4	-	25	61	33	73		-	
459	đ	64.5	.040	a	2,92		91.1	95.9	10.1	91	110	125		78	14	41	60	50	399	0	2 . 1
0	4	. 9	.010	2	5		₀	9		89	110	122	144	0	90	0 7	10	0			5
461	9		.010		•		3	96.6		101	119	131		60	0		301	36	363 1		
9	11	4	.040	m	9		0	4		26	-	127	150	m	14	45	0	53			
9		4	.010	0	0	99.0		5		92		128	152			41		~	001		9
9	m	Š			4.	100.1	93.4	96.8		91	115	130	155	0	17	8 4	8	63			
VERAGE		6.49	.023		3	99.5	91.8	95.7	9.4	93	112	127	152	176	215 2	246	316	357	399 1	-	1 . 3

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

REGULAR-PRICE GASOLINE

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	ORE
	WESTERN
NORTHEEN	WASH. AND
PACIFIC	WESTERN
5	
DIST	

NUC 4W40400 H & H &	1	M	7 00 2 1 + T 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	D 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	E T N S	10 118 125	133 142	CORRECTED ENT EVAPOR 30 50 7	VAPORATE	TD 760	WW O	HG.		
LES D287 D1266 D38	1 0526 0,646 2.53	20 0 E 0 0 E 0 0 E 0 0 E 0 0 E 0 0 E 0 0 E 0 0 E 0 0 E 0 0 E 0	2 000 2	1323 189.0 9.0	8 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 11 3 12	133 142	[LJ]	APORA	TED		2		
# 1 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0,6AL 2.44 2.44	3,4 86	7 90.	B 00	8 9 1 1 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 0 11 3 12	13					r	ESL	L055
10 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	24 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	4.6	006	• •	N 60	0 11	13		0	06	95	الما		×
1 6 6 4 3 3 4 4 4 6 4 6 4 5 4 4 6 4 6 4 6 4 6 6 6 6	44.	3,6	90.		8 1	3 12	14		89 23	33	37	413 1	0.	0
4 6 4 6 4 6 4 6 4 6 4 6 4 6 4 6 4 6 4 6	.63	1						159 1	8	0 342	388	415 1	.3.1	4.
10 642.0 10 642.0 10 642.0 10 6020 10 6020		3,7 8	90		5 1	4 12	14	156 1	N	32	36	410	0.	6.
10 64.9 8 60.7 8 62.2 9 62.2	000	3.6 8	06		3	2 12	14	4	05 2	33		414 1	0.	•5
8 60.7 .010	.51	3.7 8	1 90.	0.6	95 11		13		91 2	1 322	37	408 1	1 1	.2
8 62.2 .010	.15	6	89		92 10	8 12	-	158 2	09 2	4	376	407	.1.	4.
	640	3.0 8	0		93 10	8 12	-	9	207 26	34		406 1	0.	4.
8 61,3 ,010	.73	3,3	89.	6.6	92 10	9 12	147	20	17 2			421 1	1 1	2.
8 63.7 ,020	. 45	8	90		94 11	0	136	154 1	90 2	31 32		406 1	,2 1	.2
GE 63.0 ,016 1	,51	93.5 86.	9 90.2	9,3	94 11	11 122	140	158 2	00 24	~	377	411 1	1 1	.2

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED DIST. 15 PACIFIC NORTHWEST -- CONTINUED WESTERN WASH, AND WESTERN OREG.

	ASTM D86	TO 760 MM HG)	TED RES LOSS	90 95 EP X	308 344 3	325 364 401 1.0 1.	314 347 390	322 347 387 1.0 1.	27 368 399 1.1 .	302 329 368 .9 1.	310 343 384 1.1 1.	7 325 351 386 ,9 1.5	326 366 405 1.1 .	3 318 351 391 1.0 1.1	
	DISTILLATION	F (CORRECTED	PERCENT EVAPORA	0 30 50 70	169 205 23	51 175 215 25	49 172 214 25	49 175 224 26	56 182 224 26	39 159 198 23	44 165 206 24	48 172 223 26	54 181 224 26	49 172 215 253	
CE GASOLINE	Q	TEMPERATURE,	PE	IBP 5 10 2	6 116 12	4 113 128	1 111 12	1 112 125	5 116 13	5 110 121	3 109 122	10 1	114 128	94 112 126 1	
PREMIUM-PRICE	NUMBER RVP	OT. R+M AST	STR D	2700 2 L	1.4 95.8 9.	2.1 96.1	2.1 96.2 9.	1.2 95.9 9	2.0 96.1 9.	2.4 95.9 9	2.2 95.9	1.2 95.	2.1 96.1 9	1.9 96.0 9.2	
	EA	STM RE	526 ASTM	GAL D	.67 100.2	.63 100.1	.55 100,2	.46 100.5	.62 100	.14 99.3	.35 99.6	. 6	.90 100.1	9.55 100,1 9	
	F, GUM,	M ASTM M	66 0381	₩ WC	0	-		0	~ 1	-		007 1 2	1	012 1 2	
	R., SUL	- ASTM AST	LES D28	PI WT	64.8 0.	63.2	61.6	59.6	60.7	64.5	63.4	8 59.5	60,5	62,0 0	09
			ITEM		474	475	476	477	478	479	480	481	482	AVERAGE	SAMPLES

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971

NUED		ASTM D86 TD 760 MM HG) ATED 0 90 95 EP	7 336 366 402	338 362 38	6 317 336 37 324 - 39	6 345 37	47 379 41 27 357 40	6 308 344 398	1 332 359 39
FERENT BRANDS CONTINUE	ASOLINE	DISTILLATION. RATURE, F (CORRECTED PERCENT EVAPOR 5 10 20 30 50 7	15 129 152 174 220	08 121 143 172 216	1 124 14 132 15	20 133 153 173 213	13 128 149 171 21	15 128 144 159 200	12 127 148 168 212
	9	STM TEMPE 323 LB IBP	96	N 00	00	96	20	96 2.	.3
A I	EGULAR-	RER R+M 2	9003	0.00	889	90.3	900	90.5	90.1
A V		RESP MOTA ASTM ASTM D2699 D2700	4.6 86.	0.4.0	1.8 86.	n u	900	900	D. 4
		LEAD, ASTM R DS26 A G/GAL D	90.	.50	48.	0 m	20.	. et .	2.20
LIFORNIA		A S S S S S S S S S S S S S S S S S S S	01	0	0 1	0	m +	•	
TH CALI		SULF, ASTM D1266 WT %	0,040	(7)	010	030		-	90
NON		A S S T S T S T S T S T S T S T S T S T	0.0	59.4	°. "	80 80	60.0	00	0.
DIST. 16		SAMP	Ø 4	a N	94 94	60 M	6 0 6 0	00	60
DI		M A E E	483	4 6 6 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	4 4 6 6 6 7 6 4 7 6 4 7 6 9 7 6 9 7 6 9 7 6 9 9 7 6 9 9 9 9 9	488	490	492	493

AVERAGE

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TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

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		MONT INC	
1 1		フード・マニと	
1	7 - A C -	1111111	
	THOUR YE		
	21010	* - 0 + 0	

		œ	SULF	3	EA	OCTANE	N	BER	>			0	DISTILLATION	LAT!		ASTM	086			
ITEM	SAMP	ASTM D287 API	ASTM D1266 WT %	ASTM D381	ASTM 0526 0/GAL	S - 0	STE 2700	QC 8	B 2 ₹	TEMPE 18P	ERATU 5 1	S G O	PERCENT 20 30	CORRECTED ENT EVAPOR 30 50 7	140	TD 76(S 6	H HG	oc □ ≫	LOS
495	80	8	0.021	1		00	•	ů.		96	113 1	2 1	7	0	1 2	~	(C)		1.0	-
964	4	5			(-)	00	2	9			-	5	1	0 2	2 2	m	36	36		-
497	5	61,3	.013	0	0		2	. 9			1111	6 1	0	73 21	12 245	e	34	38	0.	1 . 4
498	-	-	.010	0	41	00	2	9			118 1	10	8 1	8 2	7 2	C.	35	0 392		-
499	-				64		0	4	9.	104		6	4	~	4	6		9		
200	80	9	.014	-	60	00	-	S			-	5 1	2 1	8 2	2	m	36	39	_	1.
501	m	2			CA	00	-	9			120 1	6 1	3 1	0	10	C.	36	0	0.	-
502	80	55.9	.023	~	2.18	100.3	91,3	95.8	7.8	97	\rightarrow	33 1	-	8	23 264	4 326	36	40		-
503	2	9			4		-	5			-	1 9	1 8	0 2	2	m	36	0 406	6.	1.
504	60	. 9	-	2	9		•	2		-	115 1	w=1	4 1	N	4	m	34	m		1.5
505	60	9	-	m	6		-	5			16	31 1	1 0	9	0	സ	34	39	•	1
506	80	6					-	S			111 1	27 1	1 0	4	~	(C)	34	6		
507	60	S	.015	-	CA	66	-				-	0	5 1	0 2	24 26	8 33	36	9 418		-
AVERAGE			.016	-1	L.	100.0	91.5		9.4	95	115 1	-	7 1		4 26	4 32	8 35	397	1.0	1.4

TABLE 3. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR DIFFERENT BRANDS -- CONTINUED

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		œ	7	2	¥ Lul	DCTANE	Z	BER	9			0	DISTILLATIONS	LAT1	NO	ASTM	086			
	SAM-	ASTM	ASTM	ASTM	ASTM	RESA	01	Σ	ASTM	TEMPE	ERATU	RATURE, F	F (CORF	DRREC	ł	TO 7	20 X	N IC		
ITEM	_	28	12	38	52	S	ASTM	:	32			PE	RCENT	FVA	PORA	TED			RES	LOS
		0_	× = ×	S E	5	05699	02700	03	a	IBP	5 1	0 20	30	20	02 (06	95	F F	b4	34
508	80		0.080		5.					4	110 1	5 1	1	6 2	9 2	4 35	37	40	1.	1.5
0	e	3			1.90		5	8		4	-	25 1	-	6 1	9	2 31	35	9	•	1.
-	4	56.8					5	0		96	4	28 1	7 1	1 22	2 28	3 35	5 38	4	0.	***
***	2	8	•	3			83.0	9	6.8	9	0	23 1		2	3 2	8 34	38	CA	-	
-	9		.110	m	4.		5	6		_	109 1	21 1	41 16	53 20	8 26	1 36	2 39	0 411	101	1.
***	2				8		4.	80						•		•	•		•	
-	15	58.0	.110	~	1,93		S	0			13	28 1	7 1	8	5 2	4 35		41		***
\rightarrow					5		5	6		(LL)	108 1	21 1			9	5 37	39	2	1.0	-
516	11		S	50	.87	94.3	85.2	80.68	8.7	95 1	10	21 1		58 20	1 2	8 34	0 36	4 403		+
-	0	56.7	.140	2	1.21			0		5		24 1	2	7 2	21 28	4 35	3 37	41	***	1.4
~	0.		12	0	4.		5	6		-	0	21 1	4 1	8 2	9	1 35	1 38	4 421		-
AVERAGE		58.0	. 1.3	2	1.66	93.4	85.2	89.3	8.6	94 1	1111	24 1	44 16	65 21	3 27	4 35	1 37	9 412	1.0	1 . 4

- MOTOR GASOLINE SURVEY, SUMMER 1071

		LOS	1 . 4	2.1		1.9	1.3	1.8	1.5	1 . 1	1.3	1.2	1.4	1.2	1.4
		S 24	1.0		Φ,	1.0				0.		1.0		1.0	1.0
	3	E P		904		***	405	0	402	9	416	403	398	3	404
	0 0 M	95	347	350	S	9	368	9	9		40	355	355	0	360
0	7 × 6	00	1 0	324	3	3	335	3	2	-	C	318	-	5	328
continued		40		275	9	264	9	266	9	264	9	548	264	~	265
L O O	TION	SO 70	2	240	\rightarrow	-		N	2	227	N	0	220	226	222
-440	DISTILLATION. F CCORRECTE	ERCENT EVAPOR		203	169	9	168	00	182	8	176	9	173	7	176
NENT BRAND	DIST	PERCE 20		178		141		161			151		150	148	152
N N N N N N N N N N N N N N N N N N N	URE		127	147	2	$^{\circ}$	120	3		132	C		127	125	129
DIFFEREN	PERAT	2	112	120	113	108	105	-	111	114	112	113	112	111	112
E GA	F	0	94	96	92	95	80	06	96	91	95	96	94	93	63
AVERAGE DATA FOR DIFFE AVERAGE UN-PRICE GASOL	S P	323 LB	8.2	8.6	8.7			8 8			8.4		8,5	•	8.6
D D D D D D D D D D D D D D D D D D D	Σ		2										6.		6.9
P A A B B B B B B B B B B B B B B B B B	A 8 E	0	0.		<u> </u>	0	0	0	•	0	0	0	0	0	9.5
A V V		ASTM D270	92.1	-	2	91.6	1.	C	-	91.9	**		-	1.	91.7
ED .	CO	0 0 0 0 0 0	6.3		. 1				e		.2	**			
INUE	0	ASO	100	66	100	66	100		100	100		100	100	66	100
- CONTIN	E A	0526 G/GAL	6.	1.95			2.64	.2		4.			9.		2.75
ORNIA-	GUMA	D 3 0 1		•	R		2			8		~	C4	2	2
DIST. 17 SOUTH CALIFORNIACONTINUED			0,025		.028		.045	•	.030		.037	.058	.035	.033	.036
Sour	ST.		6 . 8	52.7	•		7		•	55.7	. 9	0	60.3	5.	56.7
ST. 17	X	PLES	00	m	4	e	9	m	16	2	~	12	0	10	
DI		ITEM	-	520	CV	2	2	2	3	2	S	2	CV	G.	VERAGE

TABLE 4. - MOTOR GASOLINE SURVEY, SUMMER 1971
AVERAGE DATA FOR BRANDS IN EACH DISTRICT

TABLE 4. - MOTOR GASOLINE SURVEY, SUMMER 1971 AVERAGE DATA FOR BRANDS IN EACH DISTRICT -- CONTINUED

				9		4 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	MIUM	PREMIUM-PRICE GASOLINE	SOLINE	a u				0181	11.1	200	MISA	440			
3	DISTRICT NO.	NO. OF	N A W		ASTM		סיד	RESPAN	MOTO	₩ + ¥	ASTR	EMPER	TEMPERATURE, F CORRECTED		CORRI	CTED	201		H6.5		
	AND NAME	BRANDS PLES	7 1 1	API		-4		D2699	D2700	2		99	10	20 30	30	50 70	06 0	95	a.	χ η א≰ υ	2 **
			-		(0	70	•	•		1	l			ŕ	000		1
-	NOKINEAU	0 7		2	2	-		2001	207	2 . 0	100	_	7 7 7				٠.	2	2		•
2	MID-ATLANTIC CUAST	90	243	58	_			100.4	2 0 4	4.96	0.0	~	0				at .	5		0,	~
3	SOUTHEAST	19	179	59.	_			100,3	92,3	96.3	4.6	89 10	5 120	145	169	219 2	259 319	9 348	392	1.001	9.
4	APPALACHIAN	16	163	60.	_		•	100.3	5.9	9.96	9.0	9					2	3	368	80	2
Ŋ	MICHIGAN	17	66		_			2.66	4	96.1	7.6	88 1	11	9 144		215 2	255 32	1 355		œ.	0.
•	NORTH ILLINOIS	12	6.8	61.				9.66	2.4	0.96	9,5		~	-1		4 D	en Or	en en		80	00
1	CENTRAL MISSISSIPPI	19	114		.024			100.0	0	96.5	4.6		-			0.	259 32	6 358		80	1,5
90	LUMER MISSISSIPPI	17	120		.021	***		100.0	S	96.3	9.1	90 10	~	145		_	8	e 0		6.	1
0	NORTH PLAINS	15	4 8	64.	.044		29.2	90.00		95.9			107 126		177		-	9	393		
10	CENTRAL PLAINS	20	147		.022			90.66	9	96.1	8.8	90 10	~		167	213 2	m			80	9~d 0
11	SUUTH PLAINS	21	140	61.	.026	0	.8	99.5	3.1	96,3	9.1		-	1 149	173	6 D	255 320	0 355		0.	. 2
12	SUUTH TEXAS	14	99.2		.012		3.09	100.0	ທ	96,3	80.00	4	-		171	_	S.		386	0.	• 5
13	SOUTH MOUNTAIN STATES	16	258		_		5	98.6	S	95.1	8,2	~	17 132		177		_			1.0	0
14	NORTH MOUNTAIN STATES	13	06	64	_		. 3	99.5	1.8	95.7	9.4	93 1			4	215 2	90	9	399	1.1	6.3
15	PACIFIC NORTHWEST	6	9	62.	_	-	5	10001	0.	0.96	9.2			5 149		215 2	m	60	391	1.0	- 1
16	NORTH CALIFORNIA	13	72		_	-	2.50	100.0	1.5	95.8	4.8	95 13	115 132	-		224 2	64 32	90	m	1.0	4.
17	SOUTH CALIFORNIA	12	83	3 56,7	,036	2		1001	91.7	95,9	8,6	m		152	176	222 2	2	8 360		1.0	. 4
		AVERAGE		60.7	.022	1	2.67	99,8	92,3	96.1	9.2	91 10	108 124	1 148	172	218 2	57 32	9	397	6.	• 5
		SAMPLES 2,048	2,048																		

TABLE 5. - MOTOR GASOLINE SURVEY. SUMMER 1971
DATA FOR SOME ADDITIONAL GRADES

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TABLE 5. - HOTOR GASOLINE SURVEY, SUMMER 1971
DATA FOR SOME ADDITIONAL GRADES--CONTINUED

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TABLE 5. - MOTOR GASOLINE SURVEY, SUMMER 1971
DATA FOR SOME ADDITIONAL GRADES--CONTINUED

S 028	TM ASTM 87 01266	AST W	LEAD, ASTM D526	RES.	ME NUM	₩ X I	A STE	TEMP	ERATI	URE,	F CC FRCEN	CLLAT ORRE		ATE	760 760	AM HG		8018
	ж <u>-</u> -	Σ E	5	56	27	2	9	186	S		0	0		0	6	5 EP	1961	34
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		•	.5	-	4.	8		06	20	10	40	09	60	25	20 3	7 39	-	-
			0	-	9			92	60	26	56	84	31	71	32 3	04 6		-
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	60.	•	0	•	2	7		87	0 4	61	41	62	11	70	21 3	2 37		-
	50.05	•	0	2	5	0		91	0.5	6	38	56	26	48	28 3	5 42	•	-
	1 .04	•	5	•	4 .	8		06	02	16	36	99	0.4	26	28 3	8 39	-	2
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TABLE 5. - MOTOR GASOLINE SURVEY, SUMMER 1971
DATA FOR SOME ADDITIONAL GRADES--CONTINUED

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UE D	ST	4	RCE	20	in	57	61	18	147	41	54	99	53	99	20	52	47	53	9 7	S	4	4	M	S	5	80	S	5	4		
ONTINOE		UKE	PE	10	34	34	36	39	122	21	26	35	31	31	36	26	27	28	26	34	31	21	33	28	33	26	33	59	28		
<u>ي</u>		KAT		2		16	21	18	20	60	90	22	16	18	24	12	0.4	13	14		20	03	20	11	20	12	21	12	25	60	
I NE		EMPE		G. 00		0.	S	90	92 1	0	0	9	9	S	N	4	9	4	2	90	0	_		4	~	0	0	4	0	-	
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	3	ASTM	38	Œ.												***		4		8	**		-	a	m		.	-	-		
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	7	STM	12	-		O	.041		.016		•					.040		.010			\leftarrow	.074	.020		.120		.070	-	•	.030	
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	œ	- AS	05	0.	9	58	58	57	9	61	61	61	26	60	63	56	29	27	20	57	9	55	57	58	57	50	27	55	55	6	
		SAM	W L		(%)	12		CV	6	(4)	(4)	143	ca	(4)	(4)	•0	Cu	•	CAI	CV	•0	(7)	KU.	-	Φ.	0	~	KA.	1		405
		TEM			0	0	-	2	3	4	2	9	~	60	0	0		2	6	9	2	9	_	6 0	0	0	+1	2	(1)	GE GE	lt.
	STR	0	MBE		60	61	61	61	61	61	61	61	61	61	61	62	62	62	62	62	62	62	62	62	62	63	63	63	63.	VERA (dx
	0.1	Z	Z		13	13	-	4	1.4	1.4	14	14	15	1.5	15	16	16	16	16	16	16	16	17	17	17	17	17	17	17	AV	V

TABLE 5. - MOTOR GASOLINE SURVEY, SUMMER 1971

DATA FOR SOME ADDITIONAL GRADES--CONTINUED

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		.5 .01345 96.8 87.0 91.9 10.1 84 100 116 141 168 220 263 322 350 38	.3 0.019 1 0.52 96.9 86.6 91.8 10.6 91 104 115 134 156 208 256 304 324 36 .4 .016 1 .48 97.0 86.6 91.8 9.9 89 104 117 139 162 210 255 314 339 38 .1	SULF. GUM, LEAD, OCTANE NUMBER RVP. DISTILLATION, ASTM U86 1266 D381 D526 ASTM ASTM ASTM D323 1 WT % MG G/GAL U2699 D2700 2 LB IBP 5 10 20 30 50 70 90 95 EP %	SULF. GUM, LEAD, OCTANE NUMBER RVP. DISTILLATION, ASTM UB
2 4 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1111110	13	010010011001100110011001100110	STM ASTM A 1266 0381 D T % MG G	UM,
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TABLE 5. - MOTOR GASOLINE SURVEY, SUMMER 1971
DATA FOR SOME ADDITIONAL GRADES--CONTINUED

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CT		GR.,	SULF,	GUM	LEAD	OCTA	DCTANE NUMBER	HER	RVP				DISTILLATION, ASTM	LLAT	ION	AST	M 086	•	В	
I	SAM-	ASTM	ASTM	ASTE	ASTA	RESP	MOT	R+M	ASTM	TEMP	PERAT	URE, F		ORRE	CCORRECTED	10	760	ZE IG	~	
O.	LES	1287	01266	0381	0526	ASTR	ASTM		0323			P	ERCENT	_	EVAPOR	ATED			RES	S L055
		API	WT X	MG	G/GAL	02699	0	2	00	186	2	10	20 3	30 5	50 7	06 04	96 0	EP		
649	#4	57,3	0.019	1	3.12	102.7	93.5	98.1	0.0	98	_	121	148 1	176 2	225 2	260 3	329 3	366 399	9 1.0	0 5 0
650		7.9	.015			102.5	93.2	8.26	9.6	06		0				257 3	322 3	355 40	•	9 2.
-		59.8	013	-	3,35	102.7	0.46	98.4	4.6		~			168 2	222 2	~		10 408	8 1.	0.20
2	2	0	000	0	2.61	101.6	94.3	0.86	9.6	88	96	116	143 1	169 2	219 2	252 3	302 3	324 367		0 3.5
653	2	58,1	\$000	0	2,35	102,2	94.1	98.2	10.0	89	105	121	146 1	171 2		252 3	301 33	328 38	•	6 2 . 2
AGE		58.2	.011	-	2.88	102,3	93.8	98.1	9.5	88	102	118	144 1	170 2	221 2		316 34	66 64	1	9 2 .4
SAMPLES	10																			

TABLE 6. - MOTOR GASOLINE SURVEY, SUMMER 1971
ANALYSES OF LOW-LEAD CONTENT GASOLINE

		0	=	3	t t	- 6	L T	I	o v o			_	1071	TILLAT	TION	ACTM	4 0 0			
		A CA	ASTR	ASTA	ASTA	E S e	MOM		ASTA	TEMPI	ERATU	벌	2 0	URKE (CTED	107	909	J I		
		0287	01266	38	0526	ASTM	ASTE		0323	Г		9	CEN	2	POR			1	RES	L 0 S
	SAMPLES	API	MT %	₩.	G/GAL	26	027	CVI	87	0.0	7 5	2 0	8	0 5	0 4 0		95	ដ	34	346
		54.4	•		00.0	90.1	2 .	9		96		127 1	51 1	9	6 2	6	0 35	36	o	0.5
-		57.0			.43	93.6	9	0	9.2	96	111	24 1	46 1	70 23		5 32	1 34	4 38	MY.	1.0
		8009	0.017	•	.53	94.2	85.4	89.8	- 8									•	•	
		51.2	.016	2	00.	101.6	0	9		80	m	123 1	55 1	N	9	8	5 33	7 38	_	0
-		57.4	010	-	.03	91.4	8	2	0	88		etr	-	C)	2	4	35	1 40	-1	5
-		60.7	.016	2	.61	7.96	9	-		87		at .	-	in	5 2	7 3	5 32	5 35		1.5
		57.5	.021	-	.52	91.8	3.	2		88	0	0	444	4	5	7 3	2 37	7 41	1	2.7
		60.1	.022		.51	6.96	9	-		92	102 1	15 1	-	0.	2	7	32	7 37	_	1 . 7
-		59.0	600	0	.01	91.7	4	7		9	113 1	25 1	-	66 2	2	ന	34	4 38	8 .	5.5
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		53,3			• 0 4	101.6	1.	9		9 1	'n	\sim	48 1	N	2	il M	5 3	37	•	1.5
		62.6			. 55	95.7	9	•		06	0	6	35		3	9	9	40	_	1.7
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_		57.7	9		• 50	97.1	9	-		6 3	9	120 1	39 1	60	2	S E	9	39	_	1.1
		58.6			000	92.4	4 .	8		93	'n	123 1	50 1	60	3	9	6	39	_	1.0
		57.0	000	-	0.05	91.0	3,	2		105	0	120 1	38 1	m	3	2	e e	40		1 . 8
		6.09	.014	-	- 47	97,3	9	91.8	0	66	0	04	37	2	7 2	±.	2	37	-	3,5
		57.1	.011	0	44.	94.6	. 9	0		06	60	120 1	43	~	10	4 3	2	38		2.5
_		59.9	000	0	0.0	93.4	2	8		91	9	18	43	C	2	3	4 3	37		1.5
		55.0	040	-	000	101.5	-	9	6	693	-	2	44 1	N	2	4 3	2	36	_	1 . 1
		58.8	000	-	0.0	92.1	4	80		96	15	59	20	ın	2	5	9	38	-	1 . 5
		58.2	011	0	64.	91.3	3	~		86	20	122 1	48 1	2	2	5	1 3	41	-	2
		61.0			.54	97.2	9	91.9	9.1	96	110	22	4 1	60 19	2	40 30	4	30 38		1 . 3
		59. A	040	-	.57	96.3	9	-		6	90	CA	4 1	4	7 2	1 3	ы С	39	_	1 . 4

TABLE 6. - MOTOR GASOLINE SURVEY. SUMMER 1971
ANALYSES OF LOW-LEAD CUNTENT GASOLINE -- CUNTINUED

			SULF,	UM,	A	UCTA	NE NUM	BE	٧P			0.1	STIL	ATIO		M	080		
		ASTM U287	ASTM D1266	ASTM D381	A S T M D 5 2 6	RES. ASTM	ACTA	¥ !	ASTM D323	TEMPE	RATOR	E, F	CENT	EVAP	ED TO	10 760	Σ	2 PHC 2	07 SE
CITY	SAMPLES	\neg	R LE	_	5	02699	027	2	LB	186	5 1	0 50	30	20	20	06	95	J.	34
PHILADELPHIA	**	58.0			.33	•	CL)	~	•										
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MASHINGTON		58,3	.012		.53	7	9	-;		0.00		~	5 15	2	25	312	35	16	0
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TABLE 6. - MOTOR GASOLINE SURVEY, SUMMER 1971
ANALYSES OF LOW-LEAD CONTENT GASOLINE -- CONTINUED

TABLE 6. - MOTOR GASOLINE SURVEY, SUMMER 1971
ANALYSES OF LOW-LEAD CONTENT GASOLINE--CONTINUED

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TABLE 6. - MOTOR GASOLINE SURVEY, SUMMER 1971
ANALYSES OF LOW-LEAD CONTENT GASOLINE -- CONTINUED

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TABLE 6. - MUTOR GASOLINE SURVEY, SUMMER 1971
ANALYSES OF LOW-LEAU CUNTENT GASOLINE -- CONTINUED

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TABLE 6. - MOTOR GASOLINE SURVEY, SUMMER 1971
ANALYSES OF LOW-LEAD CUNTENT GASOLINE -- CONTINUED

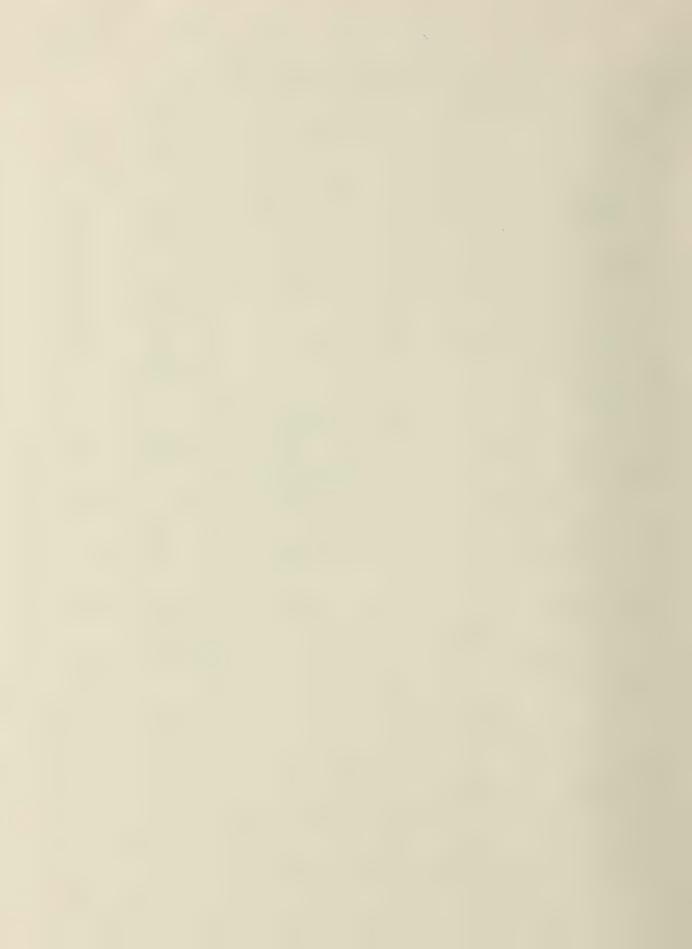
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IABLE 7. - Cumulative percents of samples of all grades by research octane numbers by districts, motor-gasoline survey, summer 1971

ative	les	w .0	_	0.1	_	_	_	~	10	~	7	10	0.0	01
Cumulative	samples	36	207	647	92	1,60	2,361	2,478	2,60	2,648	3,057	4,285	4,549	4,60
	17		8.9	17.7	18.8	41.7	54.7	56.8	56.8	56.8	58.3	96.4	100.0	
	16		6.4	15.2	19.3	34.5	53.2	56.1	57.3	57.9	59.1	94.2	100.0	
	15	3.1	4.7	9.4	28.3	50.4	52.8	52.8	52.8	52.8	59.8	91.3	100.0	
	14	1.6	7.5	18.8	31.2	45.2	51.6	51.6	53.2	59.1	76.3	8.96	100.0	
	13	0.7	13.0	32.1	39.1	48.1	53.3	53.7	64.1	67.0	81.4	99.5	100.0	
	12		4.1	8.6	10.7	35.5	53.3	54.3	56.9	56.9	59.9	93.4	100.0	
	=		0.7	9.6	28.3	47.4	51.2	51.2	52.2	54.3	79.5	9.86	100.0	
	01	1.0	3,8	22.0	34.2	47.3	52.4	53.0	54.3	55.9	79.9	94.6	99.4	
District	0		5.0	29.0	48.0	52.0	52.0	52.0	52.0	52.0	84.0	98.0	100.0	
	00		1.5	ထ	10.9	36.1	51.1	52.9	56.2	56.2	57.7	95.3	99.3	
	7	ó.4	5.0	11.9	14.6	28.0	54.8	56.3	56.3	56.3	59.8	95.8	100.0	
	9		2.7	8.2	8.9	19.9	45.9	52.1	53.4	53.4	74.0	100.0		
	5	4.0	4.2	7.9	13.4	22.6	52.7	57.7	57.7	57.7	0.69	98.3	99.2	
	4	4.0	2.5	11.4	15.1	28.4	52.1	56.8	59.0	59.0	61.2	86.4	99.0	
	m												95.0	
	2		1.8	7.1	9.6	19.6	45.5	52.6	56. 1	56.5	57.7	85.7	96.6	100.0
	-	9.0	2.3	9.1	6.7	20.6	46.9	50.9	54.3	54.3	54.9	90.08	97.7	100.0
Research	number	86	91	92	93	94	95	96	26	86	66	100	101	103

Cumulative samples total 2 12 51 51 169 413 744 1,430 2,304 2,535 2,601 2,653 2,891 3,592 4,334 4,562 4,598 4,601 1.0 9.9 16.1 92888 7 53. 55. 56. 57. Cumulative percents of samples of all grades by motor octane numbers by districts, motor-gasoline survey, summer 1971 48.0 55.0 57.3 57.3 5.8 9.9 14.6 24.6 78.9 97.1 91 18.1 44.1 52.8 52.8 53.5 65.4 90.6 100.0 1.6 15 0.5 1.6 3.2 10.8 17.2 32.3 38.7 51.6 55.4 60.8 63.4 75.8 82.8 95.7 99.5 7 0.9 2.9 4.0 11.9 26.8 69.4 79.8 88.6 97.7 99.8 52.1 54.7 54.4 60.7 65.2 33 60.9 73.6 97.5 100.0 17.3 44.2 55.3 56.9 56.9 0. % ... 12 25.9 48.5 51.9 52.2 52.2 20400 0.7 53. 9 43.5 50.2 53.0 53.7 54.0 0.3 1.0 1.9 9.3 56.5 73.2 95.2 100.0 9 46.0 52.0 54.0 55.0 57.0 73.0 90.0 94.0 1.0 2.0 2.0 5.0 9.0 21.0 0 1.8 6.6 11.7 61.3 75.9 96.4 99.6 220070 ∞ 28. 50. 55. 56. 0.4 2.3 10.3 23.0 51.7 55.9 56.3 56.3 57.1 69.0 88.1 98.5 20.5 47.3 53.4 53.4 53.4 54.1 82.9 95.9 3.4 9 0.4 1.7 4.2 8.8 14.2 28.0 53.1 57.3 57.7 58.2 63.6 78.2 95.0 99.6 2 3.5 61.0 71.9 88.6 98.0 24.0 46.9 58.0 59.0 4 18.6 46.9 53.8 54.8 56.6 61.3 81.4 98.5 99.8 0.2 1.7 5.7 8.7 က œ TABLE 28.3 51.0 55.8 56.3 56.8 61.9 77.9 96.5 100.0 5.830 7 3.4 0 1 1 10 40440 8 R 8 8 8 octane 888 888 890 90 90 90 90 90 90 80 81 82 83 84 85 Motor

State	Location	Samples		State	Location	Sample
District 1 (Northeast)			District	11 (South Plains)		
Maine	Portland	50		Kansas	Coffeyville	6
Massachusetts	Boston area	125 175			McPherson	10
District 2 (Mid-Atlantic Coast)	2 Tocations	1/3		Missouri	Wichita Springfield	64 20
District 2 (this Artsin's County				Oklahoma	Bartlesville	6
D. C., Md., Va.	Washington area Baltimore	16 89		Towns	Tulsa	98 8 9
Maryland New Jersey and New York	New York City area	138		Texas	Dallas-Fort Worth 7 locations	293
New York	Albany	12				
Pennsylvania	Syracuse Harrisburg	14 18	District	12 (Southern Texas)		
Pennsylvania and New Jersey		187		Texas	Houston	154
Virginia	Richmond 8 locations	91 565			San Antonio	42 196
District 2 (Carabana)	o localions	303	District	12 (5	2 Tocations	170
District 3 (Southeast)			DISTRICT	13 (South Mountain States)		
Alabama	Birmingham Mabile	76 30		Arizona	Phoenix Tucson	70 14
Florida	Jacksonville	26		California	Bakersfield	23
	Miami area	45		Colorado	Denver	97
Georgia	Tampa Atlanta	15 135		Nevada	Las Vegas Reno	24 24
North Carolina	Wilmington	42		New Mexico	Albuquerque	94
South Carolina	Charleston	4		Texas	Amarillo	83
Tennessee	Chattanooga 9 Tocations	30 403			El Paso Lubbock	24 24
	7 1000110113	400			Midland	24
District 4 (Appalachian)				Utah	Salt Lake City 12 locations	54 555
New York	Buffalo	102			12 TOCATIONS	555
Ohio	Cincinnati	107	District	14 (North Mountain States)		
	Cleveland Columbus	103 15		Idaha	Boise	21
	Toledo	4		Montana	Billings	58
Pennsylvania	Pittsburgh	74		W 11 .	Great Falls	6
	6 locations	405		Washington	Spokane 4 Tocations	101 186
District 5 (Michigan)			District	15 (Pacific Northwest)		
Michigan	Detroit	203	D.311141	10 (1001110 11011111031)		
	Northern Peninsula 2 locations	36 239		Oregon	Portland	14 113
	2 locations	237		Washington	Seattle 2 locations	113
District 6 (North Illinois)			District	16 (Northern California)		
Illinois and Indiana	Chicago area	129				
lowa	Davenport Madison	2 15		California	San Francisco Bay are T location	172 172
Wisconsin	3 Tocations	146			1 location	1/2
District 7 (Central Mississippi)			District	17 (Southern California and H	lawaii)	
				California	Los Angeles area	166
Indiana	Evansville	24 91		Hawaii	Honolulu 2 locations	26 192
Kentucky	Indianapolis Louisville	72			Z locations	172
Missouri and Illinois	St. Louis area	74				
	4 Tocations	261		Total	76 locations	4,602
District 8 (Lower Mississippi)						
Arkansas	Little Rock	85			C	D
Louisiana	Baton Rouge Lake Charles	24 2	District	Locations	Samples	Percent
	New Orleans	73	1	2	175	3.8
Tennessee	Memphis	90	2	8	565	12.3
	5 locations	274	3 4	9	403 405	8.8
District 9 (North Plains)			5	2	239	5.2
		0.4	6	3	146	3.2
Minnesota North Dakota	Minneapolis-St. Paul Williston	94	7 8	4 5	261 274	5. 7 5. 9
	2 locations	100	9	2	100	2.2
			10	5	313	6.8
District 10 (Central Plains)			11 12	7 2	293 196	6.4 4.2
łowa	Des Moines	148	13	12	555	12.0
Kansas	Phillipsburg	10	14	4	186	4.0
Kansas and Missouri Nebraska	Kansas City area Omaha	82 63	15 16	2	127 1 7 2	2.8 3.7
ryeuraka	Scotts Bluff	10	17	2	192	4.2
	5 locations	313			4 402	100.0
			Total	76	4,602	100.0



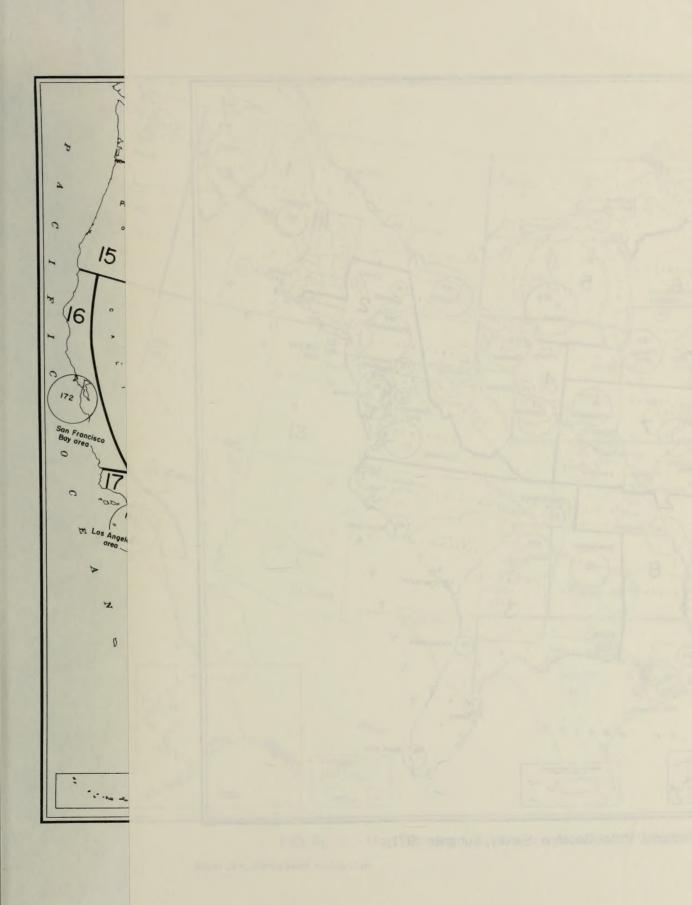




FIGURE 5.—Map Showing Locations and Numbers of Samples for the National Motor Gasoline Survey, Summer 1971



